TECHNOLOGY DEPT!
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Fleet Owner

evoted to the better operation and maintenance of all automotive fleets
OLUME 25 NOVEMBER, 1940 No. 5

President E. DeMaria . . . "Roads used to be our chief worry . . . today it's any truck that wastes money every mile it operates."

mmercial *Has Bought* UPER POWER WHITES *very Month This Year*

COMMERCIAL MOTOR FREIGHT, INC., of Columbus, Ohio, one of the largest common carriers in the midwest, bought its first Super Power White in September 1939 . . . a 318 cu. in. engine model which weighed 1,850 lbs. less than the 415 cu. in. type of tractor with which its ability and economy were to be compared.

How well it proved out is proved by the fact that . . .

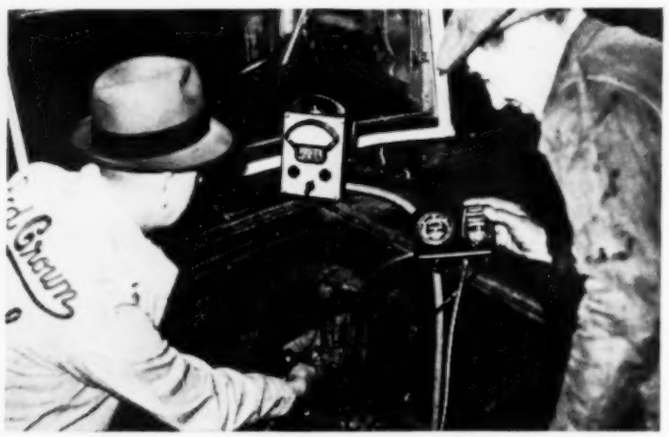
Since the first of the year, Commercial has been modernizing its fleet with the purchase of more Super Power Whites every single month!

Find out what White Super Power can do for you. There's a model for every type of business in capacities from 1½-ton up. Phone your local Branch or Dealer or write THE WHITE MOTOR CO., Cleveland.

SUPER White POWER

GROCERY FLEET GETS FROM 5% TO 20% BETTER MILEAGE

One of the most important services a Standard Automotive Engineer renders is finding the wasteful engines in your fleet. When one of these engineers and the equipment superintendent of a Mason City, Iowa grocery fleet finished checking and adjusting the 27 units in this fleet, they found that three of the engines gave 20% better gasoline mileage. The average saving on the balance of the



fleet was 5%. Together the saving was equivalent to a cent per gallon less on the cost of gasoline for the fleet.

If you keep complete records of mileage and costs on individual units in your fleet, a Standard Oil Engineer can help you find out why cost may vary between units or on any particular truck.

MODEL DELIVERY FLEET USES STANDARD OIL PRODUCTS

A. F. Schwahn & Sons Co., Eau Claire, Wis. has found out that one of the best methods of avoiding high fleet operating costs is to know just what these costs are at all times. To do this a complete system of maintenance procedure has been set up. Instruments are used for making accurate tests and adjustments on the engines. As a result, costs have dropped steadily since the plan was started.

Now, with the close accounting of costs, Standard Oil fuels and lubricants have been adopted and even in this well maintained fleet Standard Automotive Engineering Service is welcomed.

FREIGHT LINES PRESIDENT ADD ANOTHER REASON FOR USIN STANDARD ENGINEERING SERVIC

President A. K. Scherer of the Scherer Freight Lines, Otta Illinois, writes:

"Our company has maintained a splendid safety record dur the past few years and we feel that a great portion of this succes safety program should be attributed to your engineering ser because your tests have brought about better operating efficie on our tractor units and have increased their all-around performan

"We feel that your company is performing a great service to t trucking industry by extending this engineering service. There is question that it will increase the safety of operations and prom better public relations in our industry."

YOU CAN GET THE SAM ENGINEERING SERVICE THA HELPED THESE FLEET ME

If you operate in the Middle West where Standard Automot Engineering Service is available, why not find out, at least, w this service has to offer you. Call in one of the engineers. Let h explain how he works and where he thinks his service will fit i your operation. It will cost you nothing but a phone call to t nearest Standard Oil (Indiana) office or a card to 910 South Mi gan Avenue, Chicago, Illinois. Ask to have a Standard Automot Engineer see you. In Nebraska, call or write Standard Oil Nebraska at Omaha.

STANDARD OIL COMPANY (INDIANA)

AUTOMOTIVE ENGINEERING SERVICE — LOWERS MILEAGE COSTS

Your Blackhawk Jobber Salesman will be mighty glad to let you try a Blackhawk Service Jack IN YOUR OWN SHOP. See for yourself what a "profit upper" it really is! There's no obligation.

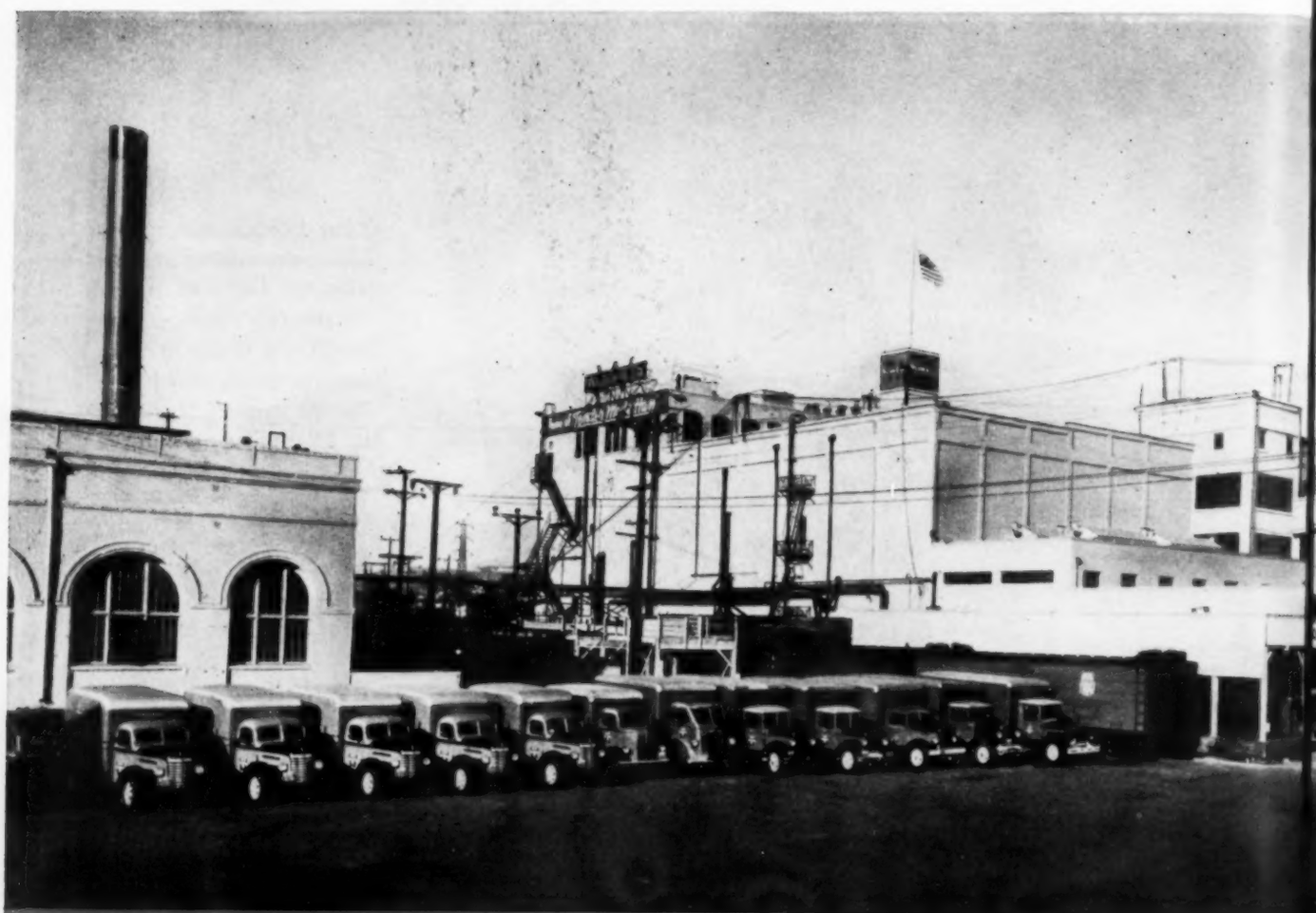
A Product of
BLACKHAWK MFG. CO.
Dept. J7110 Milwaukee, Wis.

BLACKHAWK

More for Your Money SERVICE EQUIPMENT

WILSON & Co.

DRESSES D



LOS ANGELES PLANT of Wilson & Co. whose fleet of 70 Macks, Autocars and G.M.C.'s rolls up more than 100,000 miles a month. • This fleet also uses *Insulated Texaco Motor Oil* and *Texaco Thubans* and *E. P. Lubricants*. Road failures are reported as practically unknown.

TEXACO DEALERS INVITE YOU to enjoy Fred Allen in the new full-hour program of The Texaco Star Theatre . . . with Kenny Baker, Al Goodman's Orchestra and a great cast. Every Wednesday Night, Columbia Network. 9:00 E.S.T., 8:00 C.S.T., 10:00 M.S.T., 9:00 P.S.T.

TEXACO

REG. T.M.

TEXACO T

SDOWN *Haulage Costs*

DESPITE 100,000 miles a month out of its Los Angeles branch, on long, hot desert hauls and grueling mountain climbs, this big meat packer lengthens life of engine, wheel and chassis parts, steps up engine efficiency, increases mileage between lubrications. Credit for these results in this fleet of 70 vehicles is freely given to the exclusive use of *TEXACO MARFAK* and other Texaco Lubricants.

Texaco Marfak's tough, adhesive film cushions bearings against road shocks and wear, stands up in extreme heat under the heaiest loads. *Marfak* clings to metal surfaces, sealing itself in, sealing out dirt, grit and road water. Protects parts twice as long as ordinary grease.

Trained lubrication engineers will gladly cooperate in making savings with Texaco Truck Lubricants in your fleet. Phone the nearest of more than 2300 Texaco warehousing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

IN A BEARING, *Marfak* liquefies around the shaft, retains original consistency at the outer edges, seals bearings.

SEE HOW *MARFAK* CLINGS, refusing to let go or break down under pressure.

MARFAK HOLDS TOGETHER, stays in grease-type universals and provides efficient lubrication.

Truck Lubricants

MULTI-FUEL ENGINE SAVINGS

RESULT FROM *ONE* STOCK OF PARTS

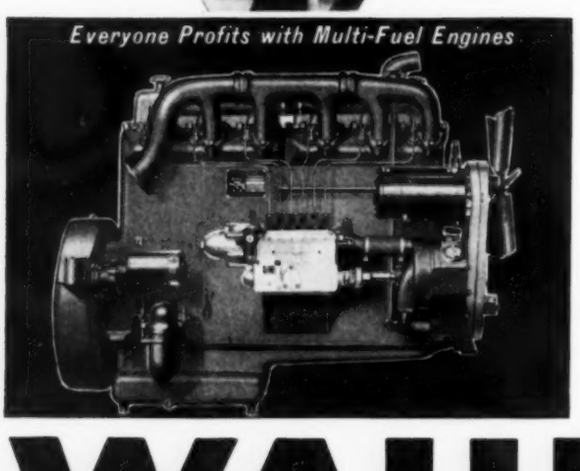
Says the Service Manager

"Think of what a difference it makes when you can service *all* engines with *one* standardized stock of parts!

"And all parts are the same price for the oil engine, the butane engine, or the gasoline engine. That means pistons, cylinders, heads, valves, rings, rods, bearings, crankshafts—every part except the fuel accessories.

"It makes no difference what fuel the truck owner is burning in his engine either. That's because the Waukesha Multi-Fuel Engine burns diesel oil, gasoline, or butane *without internal changes.*

"With a *single power plant* set-up like that, you can give 'em *real* service at less expense. You not only carry less parts, but they cost you less; being produced in cost-saving quantities for the whole Multi-Fuel Engine series."

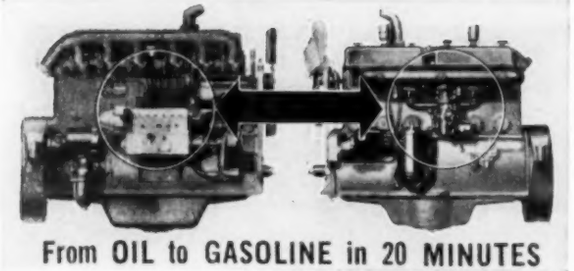


WRITE FOR BULLETIN 1173

This Advertisement is No. 4 of a Series

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.
NEW YORK TULSA LOS ANGELES

WAUKESHA



Multi-Fuel
ENGINES

CHAMPION SPARK PLUGS
MEAN MORE EFFICIENT FLEETS!

CHAMPION
PATENTED
Commercial
MOTOR FREIGHT
Columbus, Ohio
May 11, 1940
Champion Spark Plug Company
Toledo, Ohio
Gentlemen:
Commercial Motor Freight, Inc., operates a motor transportation network throughout the states of Ohio and Indiana and into the cities of Chicago, Illinois, Louisville, Kentucky, and Huntington, West Va.
Our fleet of 900 vehicles must operate in all kinds of weather. Service to the shipper depends upon the maintenance of this fleet at top efficiency. Among the quality products used, Champion Spark Plugs have always occupied a permanent place.
We wish to express our appreciation for the service and cooperation extended to us by your company at all times.
Very truly yours,
COMMERCIAL MOTOR FREIGHT, INC.
By Ray Ward
Vice President in Charge of Maintenance

TO KEEP maintenance costs low a successful fleet owner must maintain his fleet at top efficiency under any and all operating conditions, and a major contributing factor to efficient operation is a set of dependable spark plugs.

That's why the majority of successful fleet operators the country over have standardized on dependable Champions —why they have stuck to dependable Champions for years on end to prevent costly roadside delays, to economize on gasoline and oil and to be assured of sufficient power, speed and dependability to make deliveries on time.

For Champion Spark Plugs have been designed and engineered to extract the last ounce of power from today's high compression engines and modern, anti-knock fuels. Because even one "leaker" in a set will cause rough, uneven, wasteful engine performance, Champion Spark Plugs are made permanently free from troublesome leakage by the use of Sillment, a new dry powder seal. This exclusive and patented process holds Champions rigidly within their heat range, eliminates pre-ignition and fouling and assures absolutely uniform ignition in every cylinder.

If you are not now using Champions in your fleet of cars, trucks or buses, we would welcome an opportunity to help you keep your fleet operating efficiently—to help you lower your maintenance costs. Champion Spark Plugs will make any engine a better performing engine.

Save with Safety

OAKITE CLEANING MATERIALS AND METHODS SAVE TIME MONEY AND EFFORT ON ALL MAINTENANCE JOBS

For Example: CLEANING GREASY REPAIR PARTS

Whether you prefer to remove dirt, grease and oil from repair parts with a HOT solution or a COLD solution, you will find dependable Oakite materials available BOTH for either hot or cold cleaning.

And both can be relied on for thoroughness in getting rid of deposits on dismantled motor parts, transmissions, carburetors, etc., before inspection or repair.

Because of their speed and effectiveness in cleaning and the small amounts required to make up tanks or for upkeep, fleet owners everywhere have found in Oakite materials a means for reducing maintenance costs. Equally important is the fact that these savings are accompanied by the factor of SAFETY. Because Oakite materials are used in water solutions, they help to avoid the hazard of fire and explosion. It is why we say you "Save with Safety".

ASK FOR FREE BOOKLET

Right now is a good time to start saving . . . to investigate and try the proved Oakite methods outlined in a FREE 36-page booklet which we gladly mail on request. Write for your copy today.

NATION-WIDE SERVICE ON THESE JOBS

Washing painted and lacquered truck bodies

Cleaning motors and repair parts

Cleaning radiators and water jackets of motors

Disinfecting and deodorizing food truck interiors

Cleaning service station and garage floors

OAKITE Certified CLEANING

Manufactured only by
OAKITE PRODUCTS, INC., 52G THAMES STREET, NEW YORK, N. Y.
Representatives in All Principal Cities of the United States and Canada

FLEET OWNER

(Automotive Fleet Headquarters)

Charter CCA Member

Published Monthly in the interests of Automotive Fleet Owners, who do all or part of their own Service, and devoted to the Better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.

Vol. 25 New York, November, 1940 No. 5

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Published Monthly by

FERGUSON PUBLISHING COMPANY, Inc.

90 West Street, New York, N. Y.

(Telephone: REctor 2-9179)

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Subscription: $2.00 Yearly; Single Copies 25c

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IT'S HERE! FOR YOUR TRUCKS

KRAFT SYSTEM
KRAFTREAD
TIRE RENEWING

EXCLUSIVE NEW FACTORY CONTROLLED METHOD

SETS A *New Standard for Mileage*

The Kraft System renews tire mileage up to factory standards under these rigid controls . . .

- ★ Factory approved equipment
- ★ Factory specified methods
- ★ Factory trained men
- ★ Factory laboratory control

When you have your tires renewed by The Kraft System you are buying Performance instead of adjustments.

IT HAD TO COME—and it's here! An entirely new, nation-wide system that now allows you to have your tires renewed locally by the same methods used by tire factories.

No ordinary "retread" or "recap"

The Kraft System gives you the first positive assurance of dependable, extra mileage.

For the first time it has made possible an engineering guide which guarantees that locally renewed tires are brought up to the original factory standard of tread thickness, toughness and correct balance of tread and body.

Balanced like a new tire

For the first time, through the use of the new, specially designed Kraft Tire Balancer, you are assured that your renewed tires are balanced perfectly—exactly like new tires.

Step by step, every operation in The Kraft System is exactly the same as if you sent your tires back to the factory.

SEE YOUR "MASTER KRAFTSMAN"

Your distributor for The General Tire in your area alone is authorized to renew tires by The Kraft System. General Tire Distributors alone have this new method which is bringing truck operators everywhere a uniform quality of tire renewing that is reducing tire costs amazingly. No matter what makes of tires you use, investigate The Kraft System.

THE GENERAL TIRE & RUBBER CO. • Akron, Ohio

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THE KRAFT SYSTEM IS AVAILABLE ONLY AT DISTRIBUTORS FOR

The GENERAL TIRE

—goes a long way to make friends

TO GET THESE ADVANTAGES

USE ONLY A

TIMKEN BEARING

TO REPLACE A

TIMKEN BEARING

By using *genuine* TIMKEN Bearings, positively identified by the trade-mark "TIMKEN" stamped on both cup and cone, you protect your labor cost, obtain greater truck and bus availability, minimize the chances of a break down on the road, thereby avoiding high repair bills and holding customer goodwill with "on time" delivery.

TIMKEN Steel, precision manufacturing, thorough inspection and 42 years of experience combine to make the TIMKEN Roller Bearing unequalled in precision and endurance.

There is a sure way to completely restore the efficiency and dependability of a TIMKEN Bearing in any truck, trailer or bus and that is to install another *genuine* TIMKEN Bearing.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO
Service-sales Division

Manufacturers of TIMKEN Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; TIMKEN Alloy Steels and Carbon and Alloy Seamless Tubing; and TIMKEN Rock Bits.

TIMKEN
TAPERED ROLLER BEARINGS

• Many a truck operator, after trying first one make then another, has standardized on Ford equipment. Others do it much sooner. They *start* with Ford Trucks and never change.

• If you're in the market for a new truck, take the short cut to economy. Get a Ford. And with it, get a brand-new idea of savings. Ask any Ford dealer about an "on-the-job" test.

Here's Truck Value!

★ Choice of 2 improved V-8 engines—85 or 95 hp.

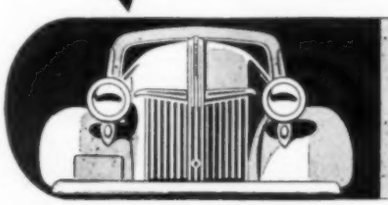
★ New 4-cylinder super-economy engine, optional in Commercial Cars and 122-inch trucks.

★ Beautiful modern styling—an important asset to your business.

★ Rugged, dependable full-floating rear axles in all trucks. ¾-floating in Commercial Cars.

★ Improved rear springs (main and auxiliary) on Regular and C.-O.-E. Trucks for heavy duty.

FOR '41 - PUT A FORD TO WORK!



1941 FORD TRUCKS

FORD MOTOR COMPANY, BUILDERS OF FORD V-8 AND MERCURY CARS, FORD TRUCKS, COMMERCIAL CARS, STATION WAGONS AND TRANSIT BUSES

Farnsworth & Ruggles, of San Francisco, have been Exide users for more than forty years

Part of the fleet of 231 Exide-equipped vehicles of various types and sizes used by Farnsworth & Ruggles of San Francisco in their drayage and warehouse business.

...before 1910, they equipped their horse-drawn vehicles with Exides!

THE firm of Farnsworth & Ruggles has been in the drayage and warehouse business for more than 82 years, and now operates a fleet of 231 Exide-equipped units in the San Francisco-Oakland area. Here is what Mr. George E. Hart, President, says about Exide Batteries—

"We have used Exide Batteries in our equipment for over forty years. At times we used Exides to furnish light for our horse-drawn vehicles prior to the time we installed motor vehicles in 1910.

"An Exide Battery was purchased for the first truck we owned, and we have continued to use Exides. We also use them in our Diesel-powered equipment.

"San Francisco is a compact city with heavy traffic—many starts and stops. We have practically no trouble. Exide Batteries have progressed to meet the needs of modern trucks. We find them eminently satisfactory."

Exide Batteries *have* progressed. You'll find striking proof of that in the 25% longer average life built into today's Exides—a feature that cuts battery cost per mile to a new low. These batteries are also available with wood and fiberglas separators for "cycling" service. See your Exide Distributor today, or write us for details.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

Exide
HEAVY-DUTY TRUCK BATTERIES

Cut Chain Costs by more than *Doubling* SAFE Mileage

● The same feature that makes WEED Americans *wear* more than twice as long also makes them the *safer* chains. That is the double-welded Bar-Reinforcement. It provides twice the metal to wear through—and grips the road *three ways*, stopping forward, back and side skids.

WEED Americans are made of "Weedalloy"—a tough, wear-resisting metal especially developed for WEED tire chains. Side chain links are welded and hardened to take the punishment of curbs and ruts. Patented Lever-Lock End Hooks make WEED Americans easy to put on and remove.

Standardize on WEED American Bar-Reinforced Tire Chains and save on tire chain costs.

AMERICAN CHAIN & CABLE COMPANY, Inc.
YORK, PA.

SEND FOR FREE CHART

25% to 50% can be added to chain mileage by proper installation. Send for free chart that shows how to apply chains so that all cross chains get equal wear.

In Business for Your Safety

ACCO

WEED

WEED American *Bar-Reinforced* TIRE CHAINS

'Cross Town *and* ....

'Cross Country

INTERNATIONAL

"Why Does the Chicken Cross the Road?"

The chicken crosses the road *so that she can get on the other side.* But men with loads to haul begin where the chicken leaves off. They look at the road *lengthwise*—and send their trucks *across the country.*

Why do truckmen year after year, buy *more heavy-duty Internationals than any other make?* The practical answer is that International Trucks give them proved *performance, economy,* and *hauling satisfaction*—the best all-around *truck values* money can buy.

Owners and drivers will tell you that they get the same profitable results with the *lighter* Internationals, in cross-town traffic, where quality shows up again in beauty and style.

Join the big family of International owners and boosters next time you buy a truck. All sizes—½-ton to big six-wheelers. Top-grade service everywhere. See any International dealer or company-owned branch.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 North Michigan Avenue Chicago, Illinois

INTERNATIONAL TRUCKS

VOL. 25
NO. 5

FLEET OWNER

NOVEMBER
1940

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

Stripping *the* Thread » »

(The Editor's Column)

BODY DESIGN

● Quite a few nice letters have been received since the introduction of our new truck body designs a few months ago. . . . It is not going to be possible to fill *all* the various requests for body designs, but we will try our best to take care of as many (and as promptly) as we can. . . . Perhaps it might be well for us to point out that it's not "duck soup" for a body designer to create bodies that will be unusual, attractive and at the same time utilitarian. . . . Many factors must be considered, the first concern of the truck operator generally being load capacity, after which follow the matters of design, weight and cost. . . . From the standpoint of appearance alone, good body design can be fairly easily obtained, principally through the exterior body lines, treatment of mouldings, paint colors, striping effects and lettering. . . . Since the truck operator as a rule specifies the inside length, width and height—and perhaps the cubic-foot capacity—the body designer is forced to start with these dimensions and try to make a good-looking job. . . . Where the specified measurements are out-of-line in regard to good design, the use of moulding, paint colors and striping effects will usually enhance the appearance of such a body, creating the illusion of cutting-down excessive heights and widths, without departing from the original specified dimensions. . . . In this series of articles the author is endeavoring to hold to conventional body sizes and yet create bodies with good lines and individuality. . . . If you have any special type of body in mind that you'd like to see us present in a modern design, do not hesitate to ask us about it. . . . There's no obligation of *any* kind, and any plans that we publish are available for use by *anyone*—free, gratis and for nothing.

●

DEFENSE STILL HAMPERED

● Several new bottle-necks in the free movement of men and materials, recently revealed in connection with the national defense program, indicate the urgency of the need for revisions of some state laws governing truck weight limitations and trade barriers. . . . For example, despite the pressing need for bombing planes, we are informed that the Tennessee weight law, which limits trucks to a gross weight of but 24,000 pounds, allows only small quantities of aluminum sheets to be picked up at Alcoa, Tenn., and transported to the Virginia-Tennessee line, where the shipment can be loaded onto larger motor vehicles for transportation to the airplane factory in Baltimore. . . . Another example: Twenty-five state and city officials and prominent business men from Nebraska, traveling by bus recently, to attend the Mid-West Defense Conference at Kansas City, Mo., were delayed for about an hour at a port-of-entry in Revere, Kansas. . . . And, somewhat previously, movements of defense equipment had been delayed or otherwise handicapped in Kentucky and Oregon, because of truck weight restrictions; also in Maryland, because of toll-bridge costs. . . . Something ought to be done about it; and done quickly!

LARGEST LOAD?. . . . That's what they say about this culvert form for the Redding Dam, being transported on a 75-ton capacity Trailmobile. . . . The "load" measures 60' x 26' x 18' and weighs 93 tons.

AWARD. . . . For distinguished service in the field of transportation, M. E. Coyle, general manager for Chevrolet, was recently awarded the B. F. Goodrich Commemorative Plaque.

●

H. Clay Fischer
Editor

●

The Editor's Column » »

(Continued from Page 15)

CHAIN-DRIVE Ford. . . . This three-axle tractor and dual-axle semi-trailer tanker, delivered recently to its owners, hauls a gross weight of 60,000 pounds, we are told, carrying 5,460 gallons of crude oil in its two large compartments. . . . The unit is equipped with chain-drive, and may be converted into a four-wheel-drive by placing a chain around sprockets mounted on the drive-wheels and dolly wheels. . . . Unladen weight is said to be less than 20,000 lbs., thus allowing a payload of more than 40,000 pounds. . . . The trailer was built by Cook Brothers and the tank by Superior Welding & Manufacturing Co., Los Angeles.

MODERN HIGHWAY UNIT

● The illustration used to decorate our "industry" story, appearing on page 20 of this issue, is representative of a modern highway transport unit, a number of which have recently been added to the fleet of Consolidated Freightways, Inc., Portland, Ore. . . . These units are Diesel-powered, of course, the design of both bodies and cabs making extensive use of aluminum and high-tensile steel, to cut down dead weight and increase payload capacity, while keeping within the legal restrictions of states on both weight and size. . . . And, which is more interesting, they are insulated, to permit heating in winter and cooling in summer. . . . These new units represent, 'tis said, the accumulation of Consolidated Freightways' experience in hauling millions of tons of freight, millions of miles, plus the scientific achievements of aggressive truck engineers, too. . . . Consolidated dubs them the "fastest operating and most dependable" equipment on the highway today.

PLEDGE. . . . Edward Smithwick, champion safe driver, pledges cooperation of the nation's truck drivers in promoting the safety of school children. . . . A Detroit schoolgirl listens attentively while the pledge is made to one of Detroit's Safety Bureau.

"PLEASURE" CAR?

● We always object vigorously when we hear automobiles spoken of as "pleasure cars". . . . During the early days of the automobile, passenger-cars were called "pleasure cars", but that handle is no longer descriptive. . . . In a study of highway traffic in 25 states, the U. S. Public Roads Administration found that 55% of passenger-car mileage is used on business trips, and that only 45% is for purely recreational or social purposes. . . . Farmers use their cars about two-thirds of the time for business. . . . In the large cities the use of passenger-cars is approximately evenly divided between business and recreation. . . . We know of at least 260,668 passenger-cars that are *not* "pleasure cars". That number, in case you are interested, is the number of cars operated by the readers of this magazine; it does *not* include the 32,786 taxicabs also covered in our circulation.

●

EXIT "BOOSTER"

● The word "booster", commonly used in referring to vacuum power-brakes, is no longer descriptive of what this type of brake really is, according to Frank B. Willis, director of sales for Bendix Products . . . It has not been so very many years ago that vacuum brakes served their purpose if they acted simply as an aid to the driver's physical force in applying vehicle brakes. In those days they were properly called "assistors" or "boosters". . . . What with the increased size and speed of commercial vehicles, it has long since been necessary for this type of power-brake to step out of its original role as a "booster" and furnish almost the entire force required for full brake application. . . . It has always been necessary, as you no doubt know, for vacuum power units on trailers to operate as "full power" units, since there is no mechanical connection between the trailer brakes and the tractor brake pedal. . . . Mr. Willis points out that modern power-brake installations, with ample reserve and proven dependability, have gone to "full power", to the point that the physical effort required by the driver is limited to the force necessary to operate the control valve. . . . In case you are interested, Bendix has recently produced a sound slide-film which dramatizes early engineering effort on vacuum power-brakes, featuring the work of James Dickson, Caleb Bragg and Victor Kliesrath—(the "B-K" coming from Bragg-Kliesrath—do you get it?) . . . The film is an interesting and instructive treatment of the subject and presents many new angles on the design and operation of vacuum power-brakes. . . . Drop us a line if you'd like to arrange for a showing of this slide-film; there's no obligation, of course.

WINNER. . . . "Shorty" Allison and his pet vehicle. . . . "Shorty" is a driver for North-Eastern Motor Freight and won first prize in the recent Colorado State Truck Rodeo.

INTERSTATE POWER COMPANY

Dubuque, Iowa
June 12, 1940

E. M. Smith Co.,
Los Angeles, Calif.

Gentlemen:

We believe that the following information pertaining to our experience with your " Brake Lining " on our buses will be of interest to you.

Because of the fact that our buses operate on routes half of which are on grades from eight to seventeen per cent, brakes in the past were a constant problem.

Of the many brands of Brake Lining tested Grizzly Brake Lining did such an outstanding job that in 1936 we standardized on this product, and since then our braking problems have been eliminated.

We have discovered that Grizzly gives us

1. Stop-ability that is sure and smooth
2. A noiseless brake (we have our first squeal to hear)
3. A minimum of drum scoring (least of a dozen other makes tested)
4. A life of service in excess of expectations
5. A dependable brake under any and all conditions
6. An economical cost of maintenance per mile that is lower than most component parts in our bus "make-up"

These six factors in the use of Grizzly Brake Lining are a complete satisfaction to us, especially when we analyze them from the angle of the severe conditions to which we apply the use of your product. Such an operation has its demands on a brake lining, and because of the way Grizzly does the job we are pleased to be able to pass on this information from our records.

Yours truly,
Edw. J. Simpson
Supt. of Bus Maintenance

Because of 8% to 17% grades, brakes were a constant problem.

Standardized on Grizzly because it did such an outstanding job.

1. SURE STOPABILITY

SERVICE LIFE IN EXCESS OF EXPECTATIONS

2. NOISELESS

3. MINIMUM SCORING

5. DEPENDABLE

6. ECONOMICAL

Complete satisfaction, especially in view of the severe service involved.

From the fleet operator's viewpoint there is only one dependable measure of value in brake lining — *performance*. And here is one of many examples of outstanding performance which provide ample and sound business reasons why these operators are standardizing on Grizzly Full-Moulded Brake Lining. . . . If you are interested in safe, smooth, dependable brakes for any type of commercial vehicle, at minimum cost per mile and with minimum maintenance, read the above carefully. Then write your nearest Grizzly office, or direct, for information relative to our plan for proving Grizzly's superiority on your own equipment. There is no obligation on your part.

E. M. SMITH COMPANY

600-650 South Clarence St., Los Angeles, California
Eastern Offices: 1835 East 24th St., Cleveland, Ohio
Export Office: 280 Broadway, New York, N.Y.
Warehouses: 311 West 66th St., New York—3225 Locust Blvd., St. Louis, Missouri

Grizzly Full-Moulded Brake Lining is supplied in rolls, segments, sets and blocks for all types of automotive and industrial equipment.

GRIZZLY 900-B
Full-moulded TRUCK BLOCKS

Stripping *the* Thread » »

(Continued from Page 16)

ONE GEAR LESS?

● One of the most interesting changes in the new low-priced passenger-cars is the rearrangement of the transmission and rear-axle ratios, to make possible most driving with only two forward speeds. . . . In the 1941 Plymouths, for example, rear-axle ratios have been raised (numerically) and the second-gear ratio of the transmission similarly changed. . . . The result is that low-gear in these cars can now be termed a "power" gear for up-hill starts or for use under extremely bad conditions. . . . The engineers claim that with increased engine output, second and high gears are all that are normally needed.

●

DRIVER MATERIAL?

● "America's best truck drivers are boys from the farm" says Edward Smithwick of Detroit, recently named by the National Safety Council as Champion Safe Driver of the United States in interstate transportation, and "introduced" to you on page 15 of our July issue . . . "I was born on a farm near Croswell in the 'thumb' district of Michigan," said Smithwick. "And during the years that I have been piloting trucks over the highways of the Middle West, I have become acquainted with hundreds of truck drivers in the roadside stands and bunk-houses of many states." . . . From talking to these drivers and observing them on the road, Smithwick seems to have become convinced that the boys from the farm make the best and safest truck drivers on the highways. Why? Because farm boys usually learn to take care of themselves at an earlier age than boys raised in the city. They start to work sooner, have definite responsibilities they must assume and attend to from the time they are very young. . . . "I'm positive that a national survey would prove that the truck drivers of the nation who have the best records for safety and efficiency are those who came from the farm," Smithwick concluded. . . . So, if you are looking for good truck drivers, lads from the farm should make likely material. However, city boys will probably prove just as efficient, Mr. Smithwick's advice to the contrary notwithstanding.

●

THIRTY MILLION MORE

● An additional $30,000,000 will be collected annually from truck operators, through the national defense automotive taxes recently enacted by Congress. . . . Of that amount, approximately $26,000,000 will be in the extra gasoline tax, and the other $4,000,000 will be produced by the increases in levies on lubricating oil, tires, new motor vehicles and accessories. . . . In 1939 motor trucks accounted for $270,679,591 of federal and state gasoline taxes, according to the Automobile Manufacturers Association. The estimated $26,000,000 of additional gasoline tax revenue to result from the national defense tax is equivalent to nearly 10 per cent of the 1939 gasoline tax bill of motor trucks. . . . Under the higher national defense automotive levies, the annual total of motor truck taxes accruing to the federal government will stand at more than $100,000,000 annually. That figure does not include social security, corporate income and/or other federal levies assessed on business generally. Special state automotive taxes on trucks currently approximate another $350,000,000 annually. . . . All of us are glad, of course, to shoulder additional burdens for the proper defense of our country. . . . As taxpayers, you are entitled to know what *your* industry is paying. We doubt that anyone else would bother to tell you; that's why we're doing it here.

ARMORED. . . . And streamlined, too! . . . It's one of the latest additions to the fleet of Brinks, Inc., said to be the largest of its kind in the world. . . . International executives grace this photograph.

●

WHAT NEXT?

● An enterprising Philadelphian recently conceived the idea of a "canine commissary" which provides fresh food on trays for pet dogs. . . . Food is selected, boned and cooked in the plant, and a fleet of three trucks covers a 25-mile radius, averaging about 250 stops per day. . . . We understand that the food is rushed into the trucks, right after it has been cooked, and is delivered to subscribers immediately, being served on paper trays, which can be discarded or burned. . . . Each truck carries a dry-ice container, to prevent spoilage in the run from plant to consumer. . . . Just imagine, if you can, your own pet dog, waiting at the curb for his next meal, with his mouth watering at the approach of every truck. . . . We wouldn't mention the thing here at all, except that it represents a *new* use for that diversified form of transportation—the motor truck.

HEIL TEAM. . . . Shown grouped around home plate just before game time, is the scrappy Heil Company Softball Team. . . . Representing The Heil Company in Milwaukee's two fastest leagues, the current team is adding laurels to the reputation won by Heil teams of other years. . . . The enthusiastic support of both Governor Heil and Joseph F. Heil, executive vice-president of The Heil Company, has been a big factor in the continued success of The Heil Company's active sports program. . . . Some of the outstanding softball players in the middle west are numbered among the personnel of the team.

You can't argue with Sally's figure

No one in the office would believe her figure on the mileage of the new rayon tires being tested on trucks #21 and #62. So to settle the argument the boss sent her out for a recheck—and here's what she found about the new U. S. Royal Raymaster:

Sally checked on mileage—discovered that Raymasters gave *more than double* the mileage where terrific tire heat and heavy road shocks combined to cut short the life of conventional tires and gave *one-third more* mileage under normal conditions.

She checked on tire failures—found that delays from tire trouble were cut to practically nothing. Asked the U. S. Distributor why, and he explained that the new Raymaster runs cooler, and withstands high heat—the biggest single cause of tire failures.

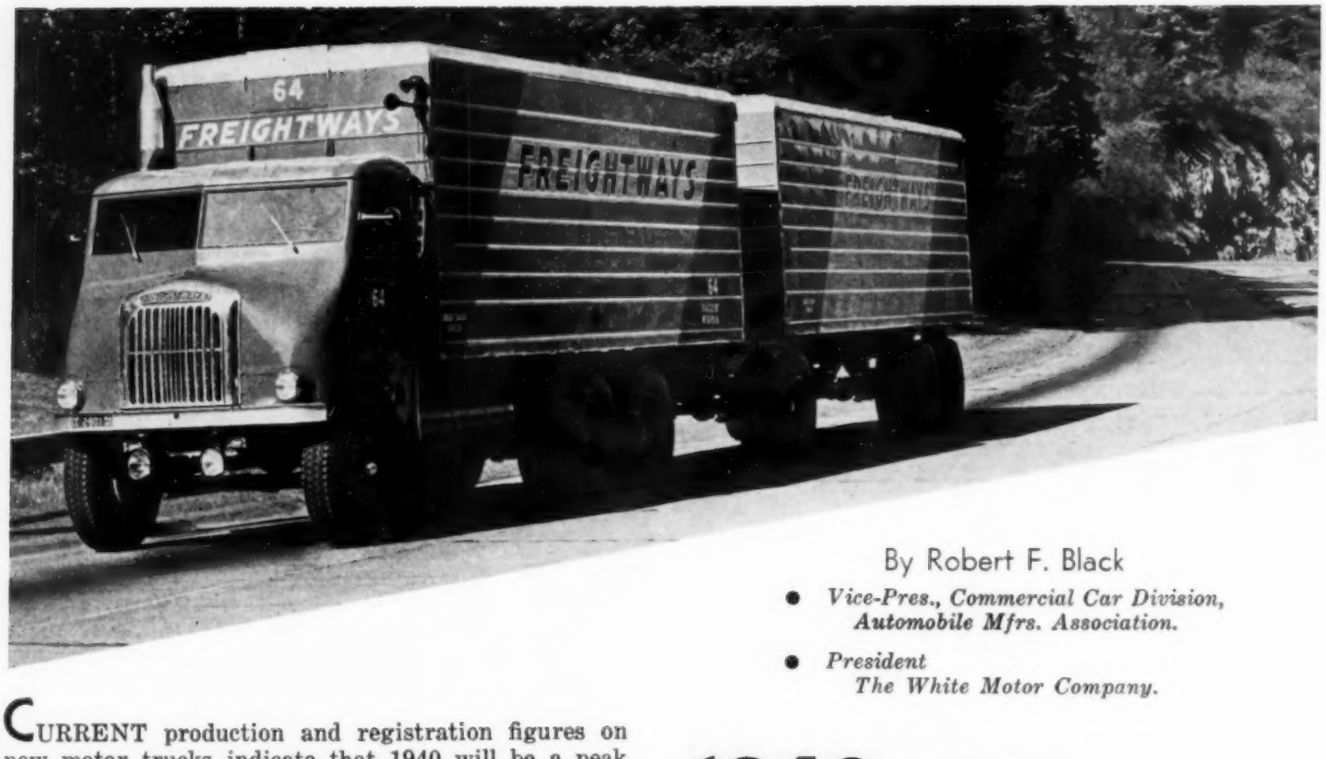
She checked on fuel consumption—her figure showed a 4% saving in gasoline since switching to Raymasters—the "U. S." man told how the thinner, more flexible rayon carcass makes the tread absorb road inequalities better, roll easier, use 12½% less power.

She checked on recaps—found that 6 of the Raymasters had been recapped *with no rejects*. She even phoned the recapper who explained that Raymasters could be safely recapped several times.

The next time your local U. S. Distributor calls, give him *just 5 minutes*—the information he'll give you on this new kind of rayon tire can mean important savings to you.

UNITED STATES RUBBER COMPANY

U. S. Tire Dealers Corporation • Rockefeller Center, New York, N. Y.



By Robert F. Black

- *Vice-Pres., Commercial Car Division, Automobile Mfrs. Association.*
- *President The White Motor Company.*

1940 *called* "PEAK YEAR" *in* TRUCK *industry*

CURRENT production and registration figures on new motor trucks indicate that 1940 will be a peak year in the motor truck manufacturing industry.

With many of the plants engaged in the production of Army vehicles and finding added demand for commercial transportation facilities, the industry's pace has speeded ahead of last year when a total of 756,844 commercial vehicles was produced from January to the end of December.

Retail sales at this time last year totaled 392,077 as against 470,000 registered for the same period this year, an increase of 20 per cent. Production figures of American manufacturers in the United States and Canada for the first nine months of this year were 617,300 or 15 per cent above 534,807 made during the equivalent months of 1939. Production for the 12 months ending September 30 totaled 810,000 units.

These statistics largely reflect the increased commercial demand, and to some extent increased activity from the defense program, but output for the Army will be more intense during the latter months of this year.

Reports from abroad as well as growing recognition by Army strategists of the indispensability of motor truck equipment to a well-prepared Army, have placed more emphasis this year on motor truck transportation than ever before in the history of the country.

The army has procured or placed orders for well over 65,000 units of motor truck equipment since the first of the year. This includes the light half-ton jobs all the way up to the seven-ton prime movers. An overwhelming majority of the Army vehicles are four and six-wheel-drive units, designed for rough cross-country going as well as over well-paved highways.

Planning for additional thousands of troops will further tax the capacity of plants. As this is written, an additional 78,000 vehicles, including 18,000 armored motorcycles, are provided in a House Bill 10572 now pending in Congress. A fair ratio of vehicles to manpower is considered as one to ten.

What effect the increased military demand for vehicles will have on commercial users of highway transportation is a cause for speculation. To what extent priorities are resorted to, will of course depend largely on the speed with which the military authorities will need the vehicles. The present outlook is that the motor truck plants will be able to supply civilian needs if they build military vehicles in pace with the production of armaments and supplies such as tanks, aircraft engines and other specialized equipment which will require more planning and tooling up.

There are some "ifs" in the form of getting adequate raw materials and the necessary accessories but the general outlook is that the industry has the plant capacity to supply the Army needs as well as those of the for-hire and private motor truck owners.

Students of highway transportation in this country, noting the efficient execution of plans by the German military authorities, see the need for meticulous care and planning in the use of the highway and motor vehicle facilities now in operation, with a view to any conditions that might arise.

It would appear that this country has on a country-wide basis nearly enough, if not enough, transportation facilities. Railroad spokesmen have indicated that existing rail facilities are adequate. We now have 4,500,000 modern motor trucks on the highways compared to the 326,000 crude solid-tired vehicles that were in existence in 1917, largely used for local cartage work. Our present highway plant comprises 1,200,000 miles of surfaced roads, compared to the

(*Please turn to page* 57)

STANDARD EQUIPMENT
51 Motor Manufacturers

REPLACEMENT
Jobbers Everywhere

PISTON RINGS
for every type of Motor

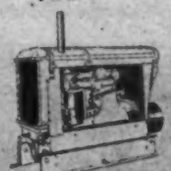
OUTBOARDS

DIESELS

MARINE ENGINES

TRACTORS

TRUCKS



INDUSTRIAL ENGINES

BUSES

PASSENGER CARS

XX WAUSAU Oil-savr

THE Free Running RING WITH THE Safety CENTER UNIT...

Stops oil pumping without power-wasting "drag". . .

No need now to resort to the old-fashioned, squeaking, dragging, power-wasting ways of stopping oil pumping —

OILSAVRS with advanced, exclusive features afford a new, modern type of ring performance — engineered to keep pace with modern motor requirements — engineered to stop oil pumping in the toughest jobs—but *not* at the expense of cylinder walls, *not* at the expense of motor pep and power, and *not* "just temporarily."

WAUSAU OILSAVR's famed safety center unit of special bearing-metal "action alloy"— reduces wear, reduces drag, keeps oil consumption at a minimum without starvation, permits maximum engine performance and fuel economy.

Free-running OILSAVR with *safety* center unit ushers in a new era in piston ring design — a new conception of piston ring performance. It's the piston ring that alert, up-to-the-minute repairmen everywhere are using.

Wausau puts the "Indian Sign" on oil pumping

- No "tricky tension"
- No dangerous drag
- No iron to break
- Non-carbonizing
- No slots to clog
- Cooler, freer running

WAUSAU MOTOR PARTS COMPANY
1600 Harrison Boulevard Wausau, Wisconsin
Manufacturers of standard equipment and replacement piston rings . . . for 18 years.

Oil-Savrs available in matched sets with Compression, XX-Scraper and XX-Super Port oil rings

LUBRICATION and tires, as you might imagine, get plenty of attention in this oil fleet.

HOW PHILLIPS PETROLEUM SOLVED THE PROBLEM

COMPANY-OWNED

TO OWN or Not to Own? . . . A question that bothers many fleet operators. . . . Phillips Petroleum believes that it is best to OWN all passenger-cars. . . . In this exclusive article they tell how frequent inspection and early replacement make it economical to do so.

THREE years ago, Phillips Petroleum Company changed from its conventional program of assigning company-owned automobiles to individual employees and adopted a new general service-car plan. Under this plan individual company cars are not assigned to individual drivers but are controlled and assigned by a "dispatcher" working under the supervision of the Traffic and Transportation Department.

Of course at first there were vigorous objections to the new plan and many reasons were advanced as to why it might be unsound and impractical. However, these objections were soon overcome and it is doubtful if any of our service-car users would now prefer to return to the former system.

Safe and dependable transportation for all company-owned car users is assured through rigid inspection of the vehicles at regular intervals and routine checking of all vehicles after each trip. Equally important from the company standpoint is the economy made possible by the present plan.

Prior to the inauguration of our service-car plan, individually-assigned cars would often remain inactive for one, two or even three weeks at a time, whereas under the new plan, all cars are kept active, and through combined trips and the use of rail, bus, and rent-a-car services, the number of vehicles necessary to handle company requirements at the headquarters garage in Bartlesville has been reduced from 70 units to 50 units, even though the total milage travelled has increased.

Definite rules regulating the authorization for use in assignment of a car were necessary in establishing the general service-car plan. The assignment of all service-cars had to clear through one office, and full responsibility was delegated to one well-qualified person, trained in all forms of passenger transportation.

A service-car requisition was next developed, which, properly filled out and approved by the employee's supervisor, must be presented to the garage attendant before delivery of a service-car is made.

Employees are urged to place their orders for cars as far in advance of the time needed as possible. This enables the dispatcher to combine trips or to select other, more economical or practical means of transportation, thus holding total transportation costs to a minimum.

Following the elimination of individual car assignments and the establishment of a general service-car plan, a definite program was adopted which resulted

PART of the Phillips fleet of office cars, lined up in front of their building.

MINOR motor check-ups are done, but the vehicles are traded before major work is needed.

OF ASSIGNING AND MAINTAINING ITS FLEET OF

PASSENGER-CARS

By Clarence J. Martin,
Supt., Motor Transportation,
Phillips Petroleum Company,
Bartlesville, Okla.

in substantial savings in the cost of this type of transportation. This three-fold policy includes: First: frequent inspection of those items of equipment which bear on the vehicle's safe operation. Second: regular engine tune-up and application of preventive maintenance practices. Third: replacement of vehicles prior to the necessity of making heavy repairs.

Applying the theory that an "ounce of prevention is worth a pound of cure," each car goes through a routine check-up after every trip. A night mechanic handles light repairs on cars returning late, thus making them ready for service the following morning. Gasoline and oil supply is then replenished and each car receives the following service check-up upon completion of a trip: First: interior of the car is thoroughly cleaned. Second: with the engine running, the ammeter and oil-pressure gauges are checked for normal reading; windshield wipers and horn are tested for proper working condition; and the steering apparatus is tested for safe operation. Third: air-pressure in the tires is brought up to standard.

These inspections often reveal items that require attention and which, except for the inspection, might pass unnoticed, resulting in delays and expenses or even an accident on the next trip. All cars are given a motor tune-up and a rigid check for mechanical condition at 5,000-mile intervals.

The average service rendered by individual vehicles has been greatly increased through the dispatcher's efforts and Phillips' system of rotating cars is an important factor in the success of this service-car plan.

Cars used on certain field assignments may be driven as little as 600 to 1,500 miles per month, whereas cars used in general service are driven from 2,500 to 4,500 miles per month. Therefore, when the need arises for replacement of a car on one of the low-mileage assignments, a current model service-car with a mileage of 20,000 to 30,000 miles is transferred to the job and the old car is applied toward the purchase price of a new car for general service.

Likewise, a new car may be justified each twelve to eighteen months on certain important low-mileage assignments, in which case the car is transferred to general service at the end of that period, where its mileage is built up rapidly and the average cost-per-mile for the entire life of the car is thereby held to a comparatively low figure.

This car rotating plan enables the com-

(*Please turn to page* 60)

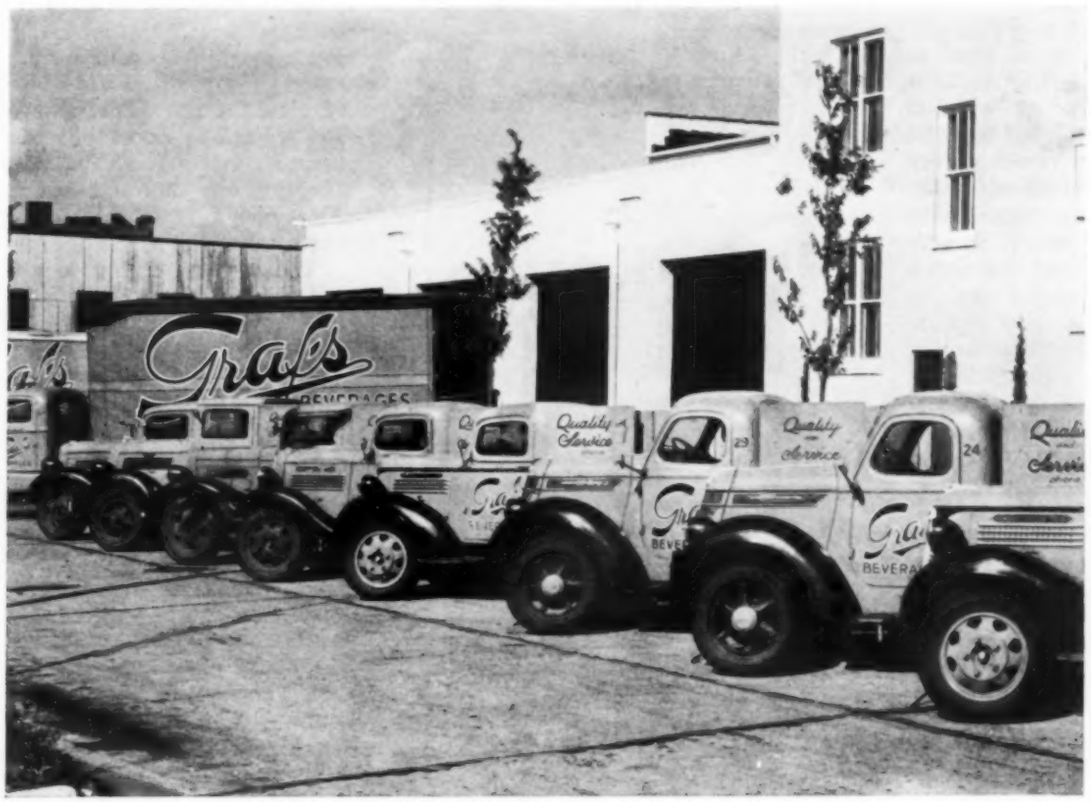
NOTE that different makes of cars are used, principally among the "all three".

CASE HISTORY NO. 73:

"We Switched to Sovac— Down Came Costs!"

"We didn't realize, when we switched to Sovac Truck-Bus Oils two years ago, what savings we were in for," reports the John Graf Company of Milwaukee, Wisc.

"Thanks to the Socony-Vacuum Fleet Engineer's study of our service, piston ring life now is considerably longer —oil consumption has dropped. Our 23 units have actually become models of operation efficiency!"



SOCONY-VACUUM'S

Fleet Engineering Service

1 WE ANSWER *YOUR* PROBLEM

The Socony-Vacuum Fleet Engineer analyzes your vehicles...load carried, routes, operating temperatures, exhaust gases, engine condition, maintenance methods.

He helps your men carry out money-saving operating and maintenance improvements — recommends the proper grades for your vehicles from famous Sovac Truck-Bus Oils, Mobilubes, Mobilgreases.

2 BACKED BY *74 YEARS'* EXPERIENCE

The knowledge of every Socony-Vacuum Fleet Engineer is based upon 74 years' lubrication experience—the world's greatest.

3 SERVICE—COAST-TO-COAST

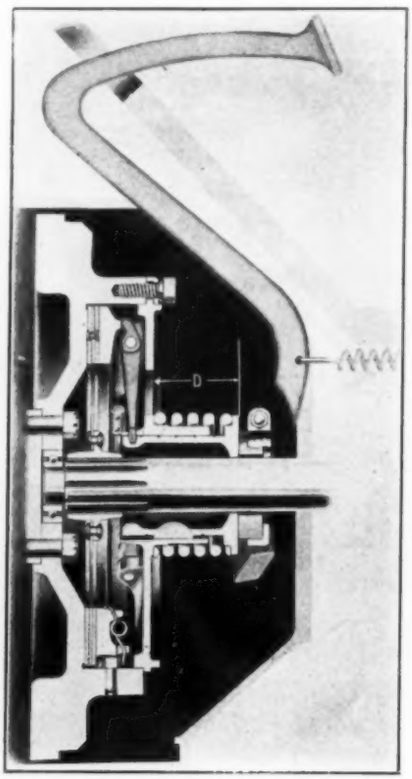
Across the U. S. A., Socony-Vacuum Engineers are always available to work with your men in selecting the right grades of the correct lubricants for your fleet vehicles.

CALL IN A SOCONY-VACUUM FLEET ENGINEER!

SOCONY-VACUUM OIL CO., INC. • Standard Oil of New York Division
White Star Division • Lubrite Division • Chicago Division • White Eagle Division
Wadhams Division • Magnolia Petroleum Company • General Petroleum
Corporation of California

SOCONY-VACUUM

A "Fleet Owner" Survey on Clutch Maintenance



171 FLEET MEN'S EXPERIENCES WITH

CLUTCHES

By H. Clay Fischer, Editor

"A CLUTCH is as good as the driver". . . . That is the concensus of opinion among 171 fleet operators who participated in our recent survey on Clutch Maintenance—Number 109 in our Question-of-the-Month series. Because many drivers are guilty of "riding" the clutch pedal, producing undue wear on throwout bearings, plus premature plate and facing wear caused by slippage, a number of fleet men seem to think that heavier springs will solve the problem. Better design, to prevent oil and grease from getting on the facings, would help, too, they declare.

Generally speaking, clutches do not seem to be unduly troublesome to fleets. Milages obtained from new clutches appear normally satisfactory. Original-equipment makes of replacements are in heavy demand, leaving us with the impression that the clutches that come with new cars and trucks are well liked by fleet men. A slight tendency towards the preference of "metallic" cultch facings (in place of asbestos) is noted on the part of certain operators. Among all wearing parts of the clutch, facings demand the most attention. Clutch replacements are secured from vehicle dealers and factory branches, as well as automotive jobbers—in about equal quantity. No special make of clutch-facing seems outstanding in fleet preference. Not enough attention is being paid to reconditioning pressure-plate and flywheel faces.

Summed above, briefly, are the conclusions we were able to draw, after carefully digesting the 171 replies received to the clutch questionnaire. Those gentlemen who were kind enough to participate in this survey, have by this time received their private copies of the confidential summary which we make each month. For the benefit of readers who did not participate, we are glad to review the questions and their answers, omitting, of course, all of the confidential information, reference to makes, trade-names, etc. Here they are:

How much clutch work is done in fleet owners' own shops? In answer to the first question, *"Where is clutch work done on your vehicles?"*, 121 operators said that they do all of their own clutch work. 18 operators farm-out all clutch work. 32 fleets do some of their clutch work, and farm-out some of it. . . . The advent of the engine-exchange plan in conjunction with dealers of certain makes of trucks, it seems, is in part responsible for the trend towards the farming-out of clutch work. For, whenever the engine is taken out of the chassis, it is a good idea to give the clutch a thorough overhaul. Fleet men agree with this, as it's quite practical.

The idea of trying to get by with a used (and often *mis*-used) clutch plate, by simply affixing new linings and re-installing it in the vehicle, does not seem very popular among fleets—at least not in *this* survey. For, when we next asked the question, *"What parts are usually replaced when clutch overhaul is done?"*, the answers were as follows: "Clutch facings only"—34; "Facings and plate"—67; "Clutch-plate, facings and pressure-plate assembly"—70.

Don't get us wrong. We are not condemning the practice of pulling the old facings off a perfectly good clutch-plate, and re-riveting on a new pair, when and if the balance of the clutch is in good condition. We *do* say, however, that a careful inspection should be made of *all* clutch parts, and if the slightest doubt exists, a new plate ought to be used, and any necessary reconditioning should be done to the flywheel-face and pressure-plate, as well. Often the operator will find a clutch-plate not worth the labor of new facings, especially so if there is wear in the hub splines or indications of burning or warpage in the plate itself. We'd prefer to let the above figures tell their own story, rather than get into a controversy with anyone.

This question can best be concluded by the answers to the next one, which asked: *"Do you feel that it is better to replace the entire assembly?"* . . . It brought "Yes"—46; "Only when necessary"—125. So there you are! Somebody will have to exercise his good judgment.

Asking *"What type of clutch facing do you prefer for average use?"* brought the following answers: "Moulded"—101; "Woven"—46; "Either type"—11; "All-metal"—13. The use of all-metal facings in single-plate automotive clutches is comparatively new, which makes the proportionately great number of preferences for this type of facing interesting, to say the least.

The tendency towards the inclusion of clutch parts in the category of units that are exchanged and rebuilt, is expressed in the answers to the next question,

(*Please turn to page* 28)

A NEW KIND OF FLEET CAR IS HERE!

THE BIG NEW LOWEST-PRICE NASH OFFERS:

- ★ 25 to 30 Miles per Gallon of Gasoline!
- ★ Flashing Pickup of New Flying Scot Engine!
- ★ More Seating Capacity than any lowest-price car!
- ★ A Coil Spring Ride on All Four Wheels!
- ★ New "Unitized" Steel Body—Safer, Quieter!
- ★ Improved Weather Eye Conditioned Air System ...and Convertible Bed!

To prove how great this new car is . . . Nash offers every large fleet operator a car to drive for 30 days without obligation!

IT'S here today. The low-price car fleet owners hoped they'd someday see.

—The kind of a car that only Nash could build!

It's big, sturdy, beautiful-looking. But just imagine it delivering 25 to 30 miles to the gallon in the hands of your average good driver!

Just imagine the money it can save on your operating costs every year! And we invite you to check this economy yourself—over your own routes, with your own drivers—for thirty days.

We want you to see how—with Nash's many new engineering developments—it will cut your operating costs on gas, oil, tires and maintenance.

From the wheels up—it's completely new. Instead of the usual bolted body and chassis, it has a new "unitized", welded steel body—used for the first time on cars costing less than $1,200. Safer, stronger—yet lighter, it adds extra mileage to tires and gas.

Instead of the usual fuel-wasting engine, Nash has the new economical "Flying Scot" engine—*Manifold-Sealed* with full pressure lubrication for dependable performance and long life.

Instead of ordinary springing, Nash offers something new in the lowest-price field—coil springs on *all four* wheels.

With its new Two-way Roller Steering, salesmen will find it quicker, easier to handle and park.

And it's made to order for winter! The new, improved Weather Eye Conditioned Air System keeps drivers going even in weather cold as 10° below. The Convertible Bed available in every Nash sedan provides a sleeping car for overnight trips.

Actually, no other car on the road today can offer you the comfort, the convenience, the all-around economy of this new, lowest-price Nash. It's ready for your inspection now. Why not see about starting the Nash 30-day test today?

If you are a large fleet operator, write W. A. Blees, General Sales Manager, Nash Motors Division, Nash-Kelvinator Corporation, Detroit, Michigan, and a car will be sent for trial.

Business Coupe illustrated, delivered at the factory, including all standard equipment and Federal taxes . . . **$731**

Weather Eye, Fourth Speed Forward, Convertible Bed; optional equipment at slight extra cost.

NOW IT'S NEVER TOO COLD!

Nash Weather Eye Conditioned Air System supplies drivers fresh air comfortably warm even at 10° below zero . . . can cut down sick days.

EASIEST HANDLING CAR EVER BUILT!

Nash's new *four-wheel* coil springing, Two-way Roller Steering let salesmen "take it-easy" on the route, yet make more calls per day.

GO NASH

AND SAVE MONEY EVERY MILE!

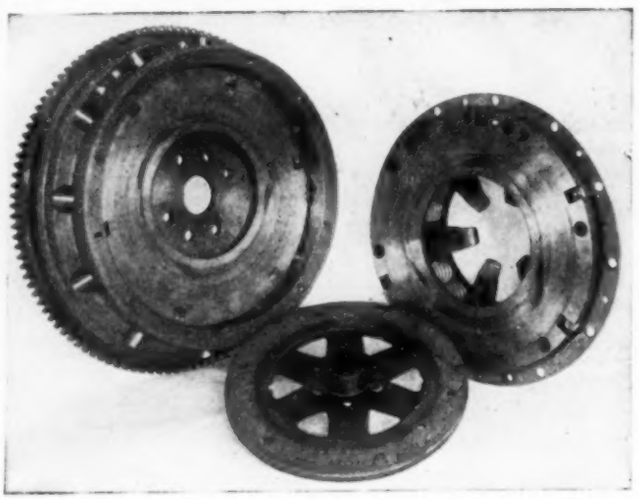
which asked *"If pressure-plates are replaced, are these new or exchanged assemblies?"* . . . The answers were: "New"—90; "Exchanged"—76; "Both"—3; "No answer"—2.

While on the subject, we asked *"Do you get comparable mileage from rebuilt pressure-plate assemblies, if used?"* . . . The answers were "Same mileage"—88; "Greater mileage"—4; "Less mileage"—20; "No answer"—59. . . . From which it seems that a little better rebuilding job could be done, or else fleet men should pay closer attention to the factors of installation and alignment, to insure successful mileage from the rebuilt and/or exchanged pressure-plate units.

And now for a little in the way of vital statistics. We asked, *"What is your average clutch life in new vehicles?* . . . The answers were broken down into four groups, as follows:

Light Trucks:—Clutch life on light trucks, according to the answers given in this survey, ranged from a low of 5,000 miles to a high of 200,000 miles, these being the extreme figures. The popular mileages were in the 20,000 to 50,000-mile bracket, which seems reasonable enough.

Heavy Trucks:—Clutch life on heavy trucks ranged from a low of 5,000 miles to a high of 150,000 miles. Again the popular mileages ranged from 20,000 to 50,000 miles.



GOOD clutch performance cannot be expected if the flywheel-face is not smooth, true and free from such things as ridges, scores, burnt marks, cracks and grooves. . . . Special reconditioning equipment is available for reconditioning the flywheel-face. . . . This particular clutch assembly has ventilating slots in the flywheel for cooling purposes. . . . It's false economy to overlook the flywheel-face.

Passenger-Cars:—Here the range was less broad, from a low of 7,000 miles to a high of 100,000 miles, but again the popular mileages were in the 20,000 to 50,000-mile class.

Buses:—Clutch life on buses, according to the answers received, ranged from 20,000 miles to 100,000 miles, most of the answers being between 50,000 and 100,000 miles.

It is not difficult to understand the wide variation in milages obtained from clutches. The door-to-door, house-to-house, or multi-stop fleets use their clutches a great deal oftener than the fellow who makes long runs with few stops. Vehicles used in heavily congested cities, likewise, wear out their clutches sooner. The principal point brought out by this particular question is the fact that clutch life is now much greater than it was several years ago, in spite of more traffic, more stop-lights, and the fact that clutches are now called upon to deliver much greater engine output, without increase in (clutch) size. Let us credit the engineers with this; they certainly have improved clutch design and materials remarkably.

In order to find out just how worth-while clutch maintenance and overhaul really is, we next asked, *"After clutch overhaul, do you get comparable clutch mileage?"* . . . The answers were "Same mileage"—115; "Greater mileage"—16; "Less mileage"—27; "No answer"—13. . . . To those boys who do not get enough mileage, we'd suggest a little more attention to pilot bearings, flywheel and pressure-plate faces. These points have to be watched carefully, if your clutch job would be a complete success.

In reply to three questions which asked for preference as to *makes* of clutches, clutch-facings and pressure-plates, various and sundry answers were given, none of which we shall reveal here. However, no one make of clutch-facing was outstandingly mentioned, although quite a number of different makes were given, including prominent original-equipment makes.

The next question, *"Which part of the clutch gives you the most trouble?"*, revealed the fact that clutch-facings are the thing which needs the most attention. Perhaps this was mentioned so numerously because it is the *one* part of the clutch that actually wears out quickly—just like brake-lining. In fact, clutch-facings were *made* to wear out, as we all know. Here is a list of the parts mentioned as giving trouble, the numbers indicating the number of times that each was checked: "Clutch-facings"—120; "Throwout bearings"—47; "Pressure-plate"—24; "Clutch-plate"—19; "Clutch-springs"—18; "Flywheel face"—2. . . . Written-in, also were the following: "Clutch fingers"—5; "Clutch pilot"—2; "Clutch hub"—1; "Plate rivets"—1.

In answer to the next question, *"Do you carry a stock of clutch parts to take care of emergencies?"*, fleet men reported: "Yes"—84; "No"—85; "No answer"—2. We also asked for the number of clutch jobs done per month, in each fleet, and got an assortment of answers ranging from "Less than 1 per month" to "50 per month." . . . No attempt has been made to average these figures and we shall not enumerate them here. They *do* represent valuable statistical data, however, and they are included in our confidential tabulation.

And here is where we come to a very important part of the clutch—the flywheel-face. We next asked, *"Do you ever have the flywheel-face reground, in doing clutch jobs?"* . . . Twenty-two fleet men said "Yes"; 52 said "Sometimes"; 93 indicated that they do *not* have flywheels refaced; and 4 did not answer.

It might be necessary to point out that the flywheel-face is quite an important part of the clutch assembly. Every time a clutch is overhauled, this surface should be checked for ridges, scores, burned marks, cracks and grooves. Burned spots and heat checks usually indicate that the clutch has been slipping. Ridges,

(*Please turn to page* 60)

Warner

ELECTRIC BRAKES

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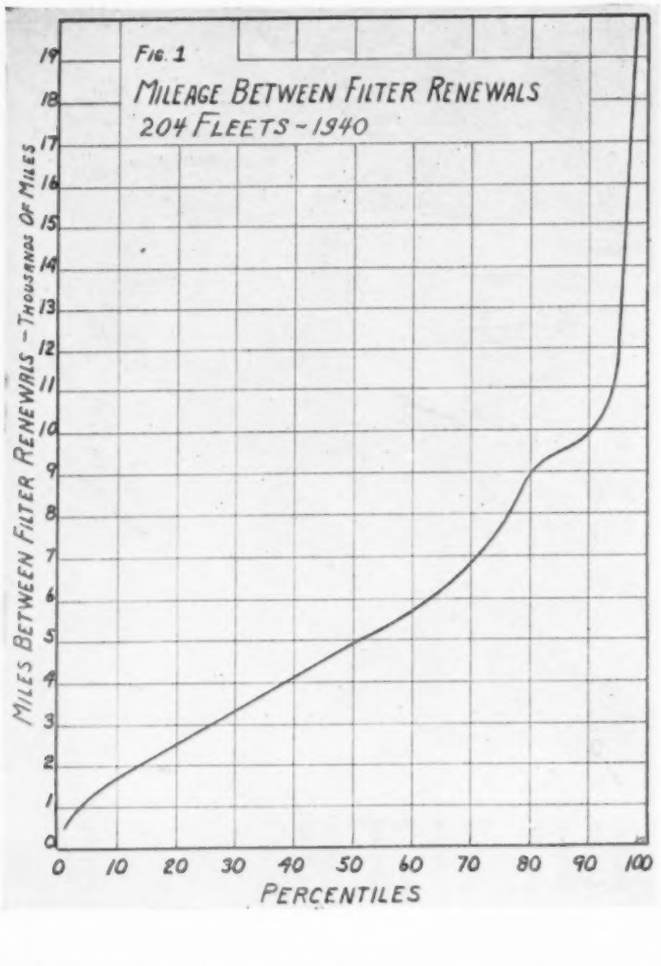


FIG. 1
MILEAGE BETWEEN FILTER RENEWALS
204 FLEETS - 1940
MILES BETWEEN FILTER RENEWALS - THOUSANDS OF MILES
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
0 10 20 30 40 50 60 70 80 90 100
PERCENTILES

MORE ABOUT

IN WHICH a lubrication specialist (and a fleet maintenance man) compares our recent Survey on Oil-Filters with an earlier one made by us, and points out the great differences in oil-change practices among fleets, telling the hows, whys and wherefores.

MANY of the published discussions on the use of partial-flow, engine-crankcase oil-filters have been predicated upon too few cases. It might as well be admitted that oil-filters are like all other pieces of automotive equipment; they require proper maintenance and attention, and are similarly subject to misuse and occasional failure.

Such (rare) failures of oil-filters have sometimes been stressed, often paying but little attention to existing authentic statistics showing many *satisfactory* cases of the use of filters. Data of this nature are rare, with the exception of two surveys on the subject recently made by FLEET OWNER magazine. These surveys have obtained reports from a large-enough number of fleets, with a large-enough number of vehicles, to be statistically quite reliable.

The data in these surveys come from fleet operators who work their maintenance operations on a "normal" basis. In other words, in accordance with the present state of the art, as they know it, and under the conditions of their operation, they are obtaining satisfactory or, at worst, endurable results. This does not mean that the operators in this group are not interested in developments or ideas which would reduce their costs, but it *does* mean that their engine operation and maintenance problems are under control; are not too expensive; and that unusual or unexpected failures are very infrequent.

This generalization applies both to the users and the non-users of oil-filters. In one of the surveys, 46% of the replies came from fleets which use oil-filters on only a portion of their equipment, while 54% of the replies came from those whose engines are 100% equipped with oil-filters. Under the different service demands and the different ages of vehicles that are found in large fleets, it is obvious that the use and non-use of oil-filters in the same fleet is not illogical, and it does indicate that optimum results are being obtained by both methods.

The questionnaire replies were obtained from fleet operators who have a large number of vehicles and a sufficient history or age of operation so that it may be assumed that the figures and mileages, which they report, have been found necessary to obtain satisfactory filter results and engine lubrication. The mileage that each operator has reported represents his opinion, based on his experience with his equipment, of the optimum usage and service which can be obtained from the make of oil-filter or brand of engine oil which he is using in his specific service. In the most recent survey, twenty-five makes of oil-filters were reported; in the earlier survey, seventy-four brands of engine oil were reported.

Questionnaire No. 84, *"Engine Lubrication"*, was offered in the Spring of 1938 and 260 fleet operators replied, covering a total of 33,198 vehicles. Questionnaire No. 104, *"Oil Filters"*, was offered in January 1940 and 330 fleet operators replied, covering a total of 47,867 vehicles. The following questions were asked in both surveys:

"When oil filters ARE used, how often do you change oil?"

"When oil filters are NOT used, how often do you change oil?"

In the 1940 survey the following question was also asked:

"How often do you change oil-filter cartridges?"

Replies were received on both a mileage basis and a time basis, but most of the replies were on a mileage basis. The replies on a mileage basis were the only ones which can be readily handled statistically, and are the ones used in this discussion.

The mileage figures reported were plotted against the number of replies in percentile curve form. This form of curve is used, since it gives a comprehensive view, in graphic form, of the reported practices, and shows the extent of the differences in these practices, as well as the trend of opinion.

A brief word explaining the interpretation of the percentile curve may assist in interpreting these charts: Along the vertical ordinate is plotted the service mileages. Along the horizontal abscissa, from left to right, are plotted the accumulated number of cases as a percentage of the total number of cases. The interpretation is illustrated by the following examples.

OIL-FILTERS

By Hoy Stevens,
Member, Society of Automotive Engineers

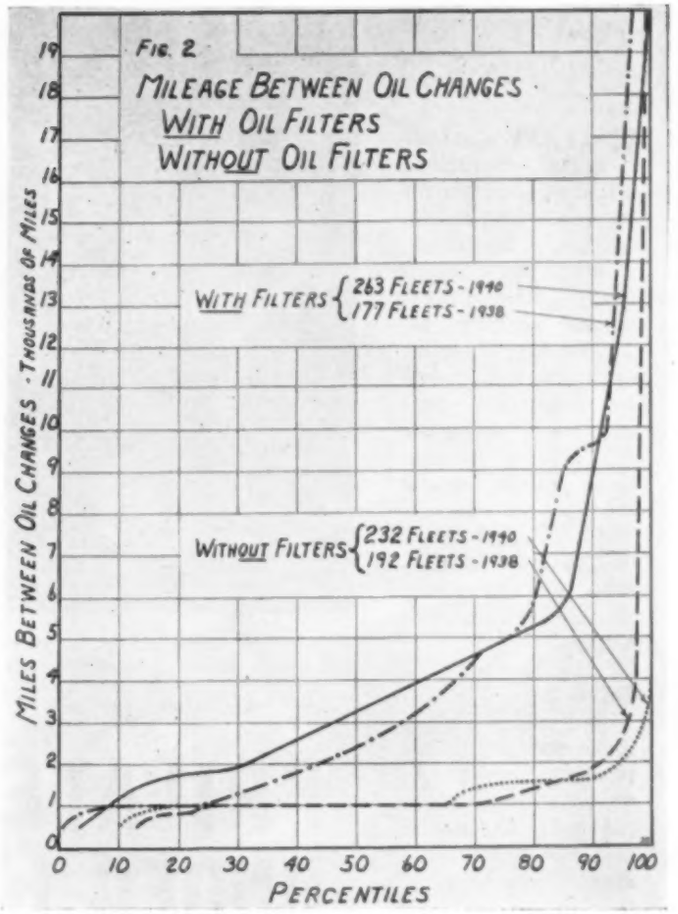


FIG. 2
MILEAGE BETWEEN OIL CHANGES
WITH OIL FILTERS
WITHOUT OIL FILTERS
WITH FILTERS { 263 FLEETS - 1940
177 FLEETS - 1938
WITHOUT FILTERS { 232 FLEETS - 1940
192 FLEETS - 1938
MILES BETWEEN OIL CHANGES - THOUSANDS OF MILES
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
0 10 20 30 40 50 60 70 80 90 100
PERCENTILES

Consider the chart for mileage at which oil-filter elements are changed (Fig. 1). At the 5 percentile point, the curve indicates 1,200 miles. This means that 5% of the fleets change oil-filter elements at or before 1,200 miles of service. At the 50 percentile point, the mileage is 4,950 miles. This means that 50% of the fleets change oil-filter cartridges at or before 4,950 miles. The values at one percentile point may be subtracted from a higher point, hence by subtracting the 5 percentile values from the 50 percentile values, we interpret that 45% of the fleets change oil-filter cartridges between 1,200 and 4,950 miles. Similar interpretations can be made regarding any point or section of the curves.

The two lower curves in Figure 2 show the information received in the two surveys concerning oil-change intervals when oil-filters are *not* installed. These two curves show a remarkable similarity. Forty percent of the operators (25 percentile to 65 percentile) change oil at 1,000-mile intervals and these values show little change in the two surveys.

The most distinct change is in the reduction of the long mileages between oil-changes, in the 1940 survey. The people who were draining at periods greater than 4,000 miles have either seen the error of their ways or did not report in the 1940 survey. (This brings out another feature of the percentile curve, namely, that data, which fall in the extreme 5 to 10% of both ends of the curves, are statistically unreliable and should usually be disregarded. This segregation and elimination of these extreme cases makes the bulk of the data, between the 10 and 90 percentiles, much more valid and more representative of the trend.)

Also, in 1940 there were fewer operators changing oil at low mileages of 500, 700, and 800 miles. Due to the small number of cases at the extreme ends of the curves, neither of these observations are highly significant as regards the general trend of practice. It *is* significant, however, that approximately 95 percent of the fleets change oil at or before 2,000 miles of service and that this mileage and percentage of fleets is practically unchanged for the two surveys, which were made nearly two years apart.

Where filters are used (upper curves, Fig. 2), there have occurred definite changes in oil-change and oil-filter-change practice, since the 1938 survey. In the lower half of the 1940 survey curve, the mileage interval between oil-changes has been distinctly increased, except for the 500-mile changers. (Their oil must be terrible and inexpensive or the dirt conditions appalling.) At the high end of the curve, the mileages have been reduced, as you will note in the chart above.

When we eliminate the extreme-end cases and consider those between the 10 and 90 percentile points, we find that 80% of the 1940 fleets change oil between 1,000 and 9,300 miles or at an average of 3,550 miles. This average mileage is relatively low and clearly indicates that oil-filters require nearly as frequent servicing as spark plugs. The great difference in service lives of oil-filters, from 1,000 to 9,300 miles, is worthy of real consideration by both the fleet operators and the oil-filter manufacturers, as the usual advertised service mileage of 8,000 miles is apparently not being generally obtained. On the other hand, the fact that 40% of the operators, between the 50 and 90 percentiles, obtain service mileages of 3,200 to 9,300 miles, should give the lower 40%, between the 10 and 50 percentiles, something to think about regarding their results. The high mileage of 8,000 to 10,000 miles may be an optimum which all, but those with very bad working conditions, should expect to obtain.

The economic advantages of larger filter units, which would permit longer useful life, must be carefully balanced with the economic viewpoint of total filtering cost against possible chemical changes in the oil in use. It may be, with certain kinds of oil, under certain operating conditions, that a small filter, frequently changed *with* the oil, would be the best combination. Oils which develop acids that attack engine bearings and internal parts of the engine could be so handled.

A number of replies in Questionnaire No. 104 expressed considerable interest in filters containing substances which are used to remove the acids formed by engine reactions in the oil. In the favored brands

(*Please turn to page* 62)

THIS unit is typical of the trucks which have been granted "exemptions" from the I.C.C. Safety Regulations, which became effective October 15, 1940.

PRIVATE TRUCKS UNDER I.C.C. RULE

•

PRIVATE trucks are placed under Federal regulation for the first time in the United States, with important exemptions granted to trucks operating in cities and "commercial zones". . . . Read this digest and find out exactly where you stand.

PRIVATE motor truck operations of department stores, bakeries, dairies, laundries, newspapers and many other businesses serving retailers and consumers have been granted important "exemptions" from the ICC Safety Regulations which became effective October 15, 1940, as the result of a petition recently filed with the Commission by the National Council of Private Motor Truck Owners, Inc.

Prominent among these exemptions are the requirements (heretofore applying only to common and contract carriers "for hire"), that drivers of such vehicles keep a daily "driver's log" accounting for all intervals of 10 minutes or more in each 24 hours during which the driver is driving, loading, eating, sleeping, etc.

Characterizing the drivers daily log as "extremely impracticable, needlessly complicated and inappropriate," when prescribed as "safety regulation"—particularly when applied to driver-salesmen, local delivery vehicles, work trucks and the like—the Council stressed the need for relief from such requirements, particularly within municipalities, where stops are frequent; and in commercial zones surrounding such municipalities.

Other exemptions obtained by the Council, which represents the ownership of more than 1,500,000 private trucks in agriculture and industry, relieve private truck operators from compliance with the requirements of the Commission with respect to the equipment of trucks with side marker-lights, flares, fusees, fire-extinguishers, etc., within municipalities and their surrounding commercial zones—and from other parts of the ICC Motor Carrier Safety Regulations which were originally prescribed to regulate "for hire" carriers of persons and property.

The regulations applying to private truck operations, effective October 15, 1940, contain the following major provisions:

1—Commercial vehicles operated by private truck owners must comply (except in municipalities and "commercial zones") with the requirements of the ICC Motor Carrier Safety Regulations, with respect to lighting devices and reflectors, brakes, safety-glass, miscellaneous parts and accessories, etc.

2—Drivers of private trucks, including owner-drivers, must be not less than 21 years of age (not less than 18 years if driving farm trucks); and must be experienced in driving some type of motor vehicle for not less than one year; must have a knowledge of the rules and regulations for drivers issued by the ICC; must have no impairment of physical condition, such as loss of limbs; must have adequate eye-sight and hearing; must not be addicted to the use of narotics; and, if hired after October 15, 1940, must furnish doctor's certificate.

3—Drivers must not be required to be on duty more than 60 hours in any week of 168 consecutive hours, nor to drive more than 10 hours in any period of 24 hours. (Driver-salesmen who devote more than fifty per cent of their time to selling may be required to work an unlimited number of hours within any "work week", but they may not drive, including unloading, loading, etc., more than 50 hours in any "work week." The same exemption applies to drivers of farm vehicles.)

The ICC Motor Carrier Safety Regulations apply to all privately owned trucks operated "in interstate commerce." It is not necessary for a vehicle to cross a state line in order to be "in interstate commerce." The character of the work in which the truck is employed determines its status in this respect. For instance, a truck is "in interstate commerce" when it transports property to a railroad station or any other destination within the state, if that property is destined for delivery outside of that state. The driver of the truck is "in interstate commerce" and subject to all of the regulations prescribed for such drivers by the ICC, not only during the trip but during the "work week" of 168 consecutive hours in which he made that trip.

The ICC Safety Regulations, which will affect more

(*Please turn to page* 63)

Packard CABLE

REG. U.S. PAT. OFF. TRADE MARK

Cuts Maintenance Costs

ON LONG HAULS

ON SHORT HAULS

THERE'S MORE

MPR*

(*Miles Per Replacement)

IN PACKARD CABLE

"Highballing" the highways, or making the city rounds—both types of runs are tough on cables. But whatever the condition of operation, you will find that the Packard line offers you a cable that is exactly right for your particular requirements . . . a cable that will enable you to cut down maintenance costs on cable replacements.

Perhaps it will be Packard 440, the ignition cable with the inorganic sheath that resists heat and oil—or Packard 500, with the same construction plus lacquer. Many operators of large fleets have found that Packard 440 and Packard 500 eliminate as many as one out of three replacements, and often more. Perhaps it will be standard Packard braid-and-lacquer cable, Packard Chrome braid, Packard Fiberglas braid, Packard low-capacity steel core, or Packard Blue—all high-quality ignition cables built according to Packard standards. It's worth your while to investigate the saving possibilities that the Packard line offers.

Standardize on Packard high-tension ignition cable, Packard low-tension ignition cable, Packard lighting wires and Packard battery cables. Consult your Packard jobber, and get more MPR — more Miles per Replacement — from your cable.

Packard will supply your service department with copies of the Certified Re-Wiring Manual, containing complete service instructions on making replacements and useful information on selecting proper gauge cable. Write Packard Electric Division, General Motors Corporation, Warren, Ohio.

Packard

REG. U.S. PAT. OFF. TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

HOW SHALL DIESEL FUEL BE TAXED?

RUDOLPH DIESEL, while a student at technical school, devised one of the most practicable and efficient machines now known to mankind. The engine bearing his name has become one of the cornerstones of modern world industry, so extensively has the ability of the machine to produce power from relatively low-cost fuel been exploited.

The size and weight of the Diesel engine largely have precluded its use where a high degree of mobility and lightness is required. Engineers have made remarkable progress in extending the utilization of the Diesel, however, and its employment by motor trucks for local and long-distance hauling rapidly is becoming widespread in many regions of the United States. It is this expansion in the operation of Diesel trucks which has served to focus attention on the taxability of the fuel used by these vehicles under present state motor fuel tax laws.

It generally is recognized that a tax on Diesel fuel used on the highways is justified. Like the taxes levied on other motor fuels, such a tax on Diesel fuel theoretically would be a "benefit" tax, or a payment by highway users for the benefits received in the form of highways. But practical application of this theory usually has been obstructed or unduly complicated by serious administrative problems.

The fuel used by Diesel engines is not necessarily a special fuel. Diesel engines usually are powered by light fuel-oils—the same fuel-oils used in oil-burners for heating purposes. Accordingly, only a minor portion of total fuel-oil consumption is by Diesel engines, and the proportion consumed by them in highway vehicles is negligible. From that fact arises the major difficulties involved in any proposal to tax the fuel used to propel Diesel vehicles on the highways.

The most obvious procedure is to amend the definition of motor fuels, as contained in existing gasoline tax laws, to include Diesel fuels. Under this method, refunds of the tax must be made to non-highway users, or fuels used for non-highway purposes must be exempt from the tax. Since it is probable that in most states more than 99 per cent of the Diesel fuel would qualify for refund or exemption, the unreasonable burden of the law-enforcement problems involved is apparent, to say nothing of the considerable inconvenience which would be suffered by those consumers using the fuel for non-highway purposes.

Another major difficulty confronting the Diesel fuel tax administrator is the huge number of outlets engaged in the distribution of fuel-oil. During the past several years, state taxing officials have succeeded in building up an effective and economical system for the collection of the gasoline tax simply because of their direct dependence upon the relatively few large distributors of gasoline for the collection of the tax.

The situation is quite different in the distribution of fuel-oil. The widespread use of range oil-burners, domestic heating apparatus, and comercial installations has encouraged many dealers selling coal, lumber, and hardware also to engage in the distribution of fuel-oil which is usable in Diesel engines. Almost all of these dealers obtain this oil from small jobbers who, in turn, are supplied by refiners. Consequently, under the provisions of state gasoline tax laws, the tax administrator would be required to collect the tax on Diesel fuel from these many small jobbers, which in many states outnumber the persons using such fuel on the highways.

The multiplicity of outlets distributing fuel-oil—Diesel fuel—and the exceedingly small proportion of such fuel actually consumed by Diesel vehicles on the highways emphasize the serious difficulties involved in attempting to trace such fuel to its ultimate consumption to establish its taxability under most existing state motor fuel tax laws.

If it is considered necessary to tax Diesel fuel used by highway vehicles, the solution which has proved most practical has been the enactment of the so-called "use fuel tax." Eleven states—California, Florida,

(*Please turn to page* 58)

NEW 1941 DODGE *Job-Rated* TRUCKS

they've got what it takes to cut your hauling costs!

HERE'S WHY

A TRUCK THAT FITS YOUR JOB SAVES YOU MONEY!

Trucks too small for your job or too large for your job are costly.	Dodge builds 112 standard chassis and body models—one to fit your job.
Trucks that are underpowered or overpowered are wasteful.	Each Dodge *Job-Rated* truck has the *right* one of 6 different truck engines.
Trucks with the *right* sized units throughout last longer on your job . . .	Each Dodge truck has the *right* one of many clutches, transmissions, rear axles, etc.
What you pay for trucks is important . . . but what you get for what you pay is even more important.	Dodge *Job-Rated* Trucks are PRICED WITH THE LOWEST for Every Capacity

• Here are trucks that will lop off dollars of expense for you! But you'll want to know *why* . . . and *how!*

Well—part of the answer is in the chart (at right). Study it carefully and you'll know what *"Job-Rated"* means . . . and *why* the *right* truck to *fit YOUR job* can save you plenty of money.

The rest of the answer is something that Dodge has been doing now for over a quarter of a century . . . *building dependable* QUALITY *motor transportation.*

Ask your Dodge dealer—*today*—to show you the *right* Dodge *Job-Rated* truck to *save money* on YOUR job!

DODGE DIVISION, CHRYSLER CORPORATION, DETROIT, MICHIGAN

DEPEND ON DODGE *Job-Rated* TRUCKS

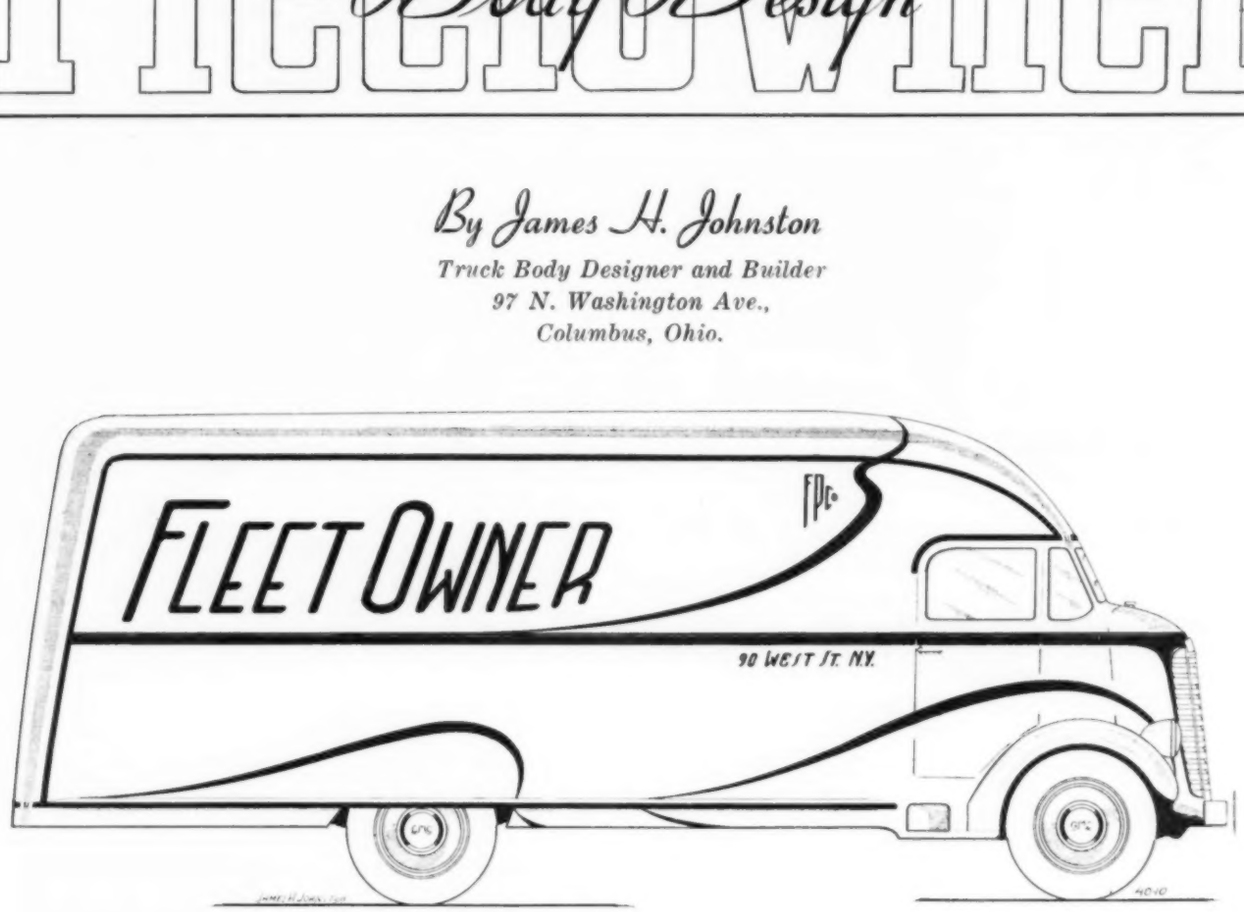
½-¾-1-1½-2-3-TON CAPACITIES . . . 112 STANDARD CHASSIS AND BODY MODELS ON 18 WHEELBASES

*Job-Rated MEANS: A TRUCK THAT FITS YOUR JOB!

SEE YOUR DODGE DEALER FOR A GOOD DEAL ON RELIABLE USED TRUCKS, TOO!

FleetOwner *Body Design*

By James H. Johnston
Truck Body Designer and Builder
97 N. Washington Ave.,
Columbus, Ohio.



Design No. 3—VAN BODY with C.O.E. CAB

THIS is the third offering in our series of modern truck body designs—an exclusive service presented by this publication for the benefit of anyone building, servicing or using truck bodies.

Since a different body design is created each month, it will be possible to cover 12 vocations per year, so that over a period of time, practically every type of fleet operation will have been served.

The author of these articles and designer of the bodies is a man who has specialized in designing and building custom-built truck bodies for many years. Although he is still in the body business, there are no "strings" attached that would prevent any fleet operator from using these designs and plans, inasmuch as they are now the property of this publication. Permission to use them is automatically granted, upon publication of each article.

It is not possible for this publication to furnish scale-drawings, blue-prints and other architectural data. In anticipation of such requests, the author advises that he may undertake to provide these services, should the demand warrant it. All correspondence, therefore, should be addressed to the author, whose address is given above.—*Editor.*

THE THIRD body design in this new series, illustrated above, is a van body, built integral with a great portion of the regular-equipment cab-over-engine cab. The author has drawn this new body upon a 160-inch wheelbase, G.M.C. cab-over-engine chassis. Front fenders, hood, etc., are standard G.M.C. parts, as is the windshield assembly and most of the cab, which can be furnished to the body builder and incorporated into the body as shown.

This van-with-integral-cab design gets its sleek lines from the large radius of roof and rear corner panels, and the long sweeping line from the top of the roof down to the top of the windshield, as well as the paint stripe sweep lines on the upper and lower side panels. Our last month's design, you will remember, used the roof and rear corner lines, and the body mouldings, for expression.

This body is recommended for light, bulky loads, such as are carried by furniture companies, depart-

ment stores and package-delivery companies, as well as certain other vocations requiring large cubic-foot capacity on a relatively light chassis.

Dimensions:—All important dimensions, including loading space, are indicated in the accompanying working drawings on the opposite page. The load space, incidentally, is approximately 17 feet, 7 inches long behind the division panel. It is 86 inches wide at the floor-line, and 81 inches high at the rear end. Additional load space is provided in the "dome" compartment above the cab.

Cab Details:—Seat dimensions and positions can be similar to those found in the standard G.M.C. cab. Seats are of spring construction, covered with a good grade of imitation leather. All glass is shatter-proof sheet, except the windshield, which is shatter-proof plate. The quarter glasses on each side are set permanently in a fixed position. The door glasses ventilate, of course. The cab doors hinge at the front and lock at the rear, a step being built into the body skirt underneath.

Dome Compartment:—The extra load-space compartment directly above the cab extends the entire width of the body, the cab ceiling forming the floor of this compartment. A 3-inch high ledge is recommended at the rear of this compartment, to keep packages from falling into the body proper. Lining for this compartment is of plywood panels. Access to it, for loading and unloading, is from the inside of the body.

Division Panel:—The panel separating the cab from the load space can be made of ¾-inch plywood, extending the entire width of the body, from the floor to a point 3 inches above the dome compartment floor. If desired, a small window with a sliding glass may be installed in this panel, directly behind the driver, so that he can look back into the loading space.

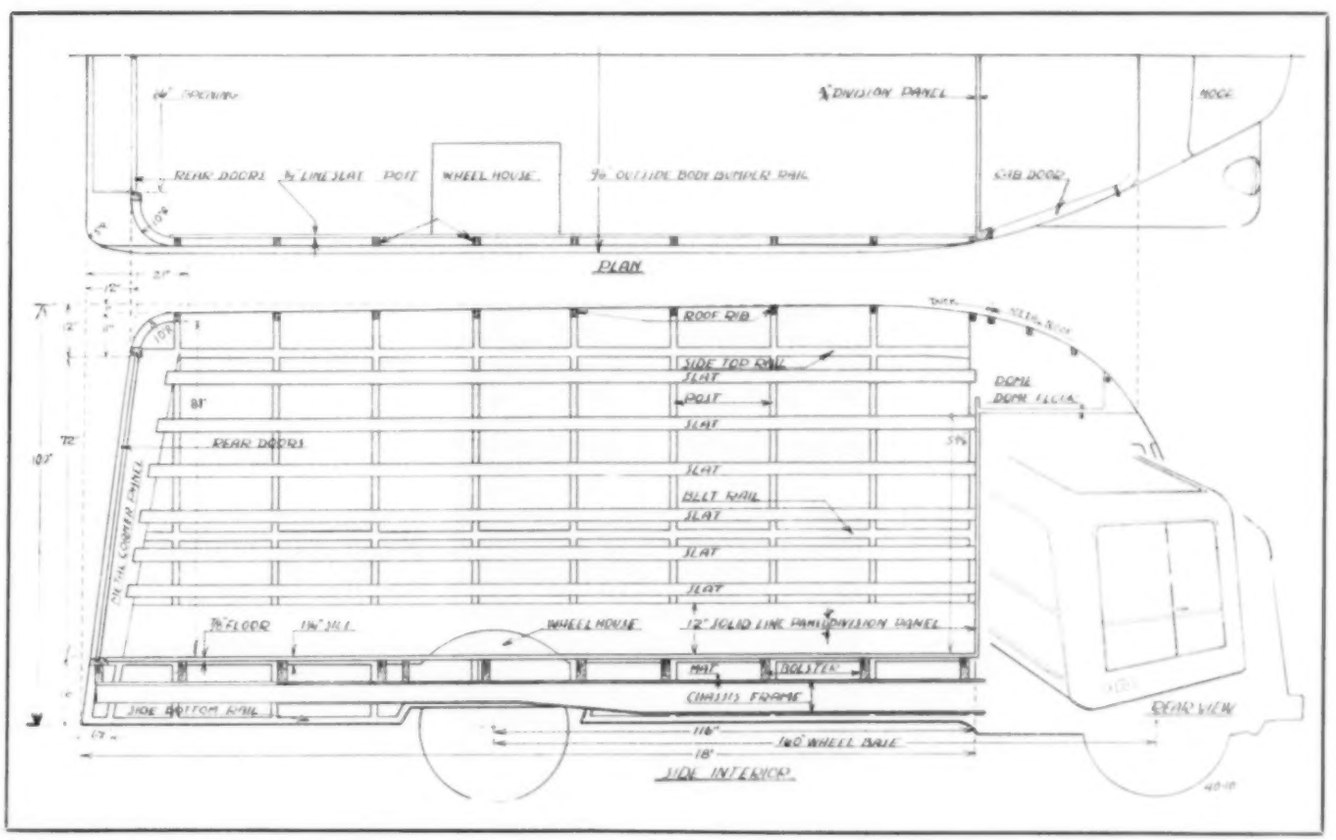
Underbody:—Because of the 18-foot length of this body, the frame must be extended, as shown, to carry the body overhang. Bolsters, 5 inches high, separate the floor from the frame. The floor should be not less than ⅞-inch thick, keyed to check dust infiltration. Oval-type wheelhouses are indicated.

Sides:—The side panels are solid and smooth. The belt moulding should align with the moulding on the hood. Note that the bumper or scuff-rails on the outside bottom of the body are raised, thus creating the effect of cutting down the apparent height of the body and contributing to its appearance. The bottom of each side panel is cut out, to permit the rear wheels to be easily removed and replaced, for tire changes, service work, etc.

Rear:—The rear opening is 66 inches wide, 72 inches high. Two doors are indicated, each hinging at the sides and locking at the center. Drip moulding should be placed above the doors and the opening should be weather-stripped, to keep out dirt and water when the doors are closed. High-grade truck body hardware should be used, with exterior finished in chrome.

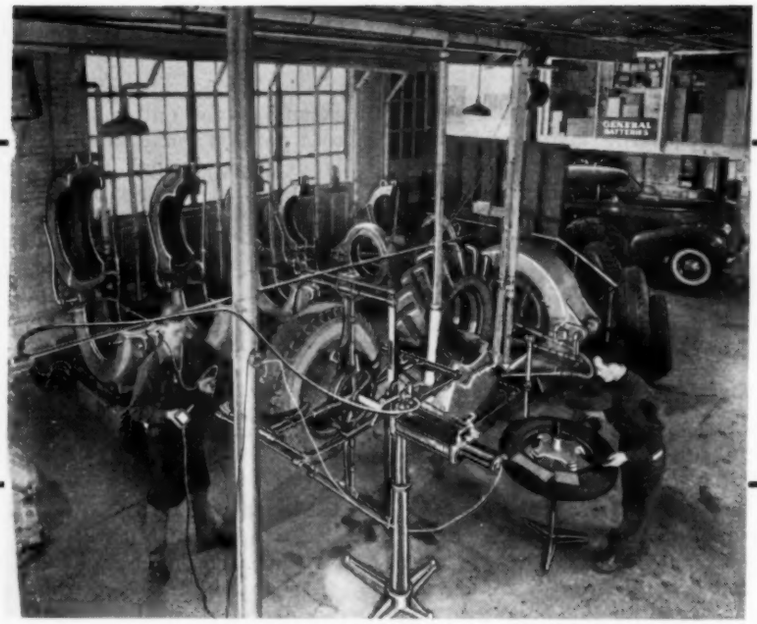
Roof:—The rear and side crown panels are of exposed body metal; also the roof over the dome, from the windshield up to a point over the division panel.

(*Please turn to page* 64)



WORKING drawings of FLEET OWNER's Custom Body Design No. 3. . . . Note that all dimensions are given in detail, together with some specifications of materials. . . . Anyone experienced in body building should be able to follow these plans without difficulty.—Editor.

HERE is a typical Kraft System retreading shop.... Note the operator in the left foreground using the "Inspectoscope", and the balancer, shown at the right.



UNDER the Kraft System General does not specify the make of treading equipment used.... Any make can be used, providing it is up to General's standards.

KRAFT SYSTEM OF TIRE **RETREADING** SPONSORED BY GENERAL

NATIONWIDE uniformity in recapped and retreaded tires is promised in the current announcement of General Tire's "Kraft System" of tire rebuilding, now available at local distributors of General tires.

Factory control and the use of factory-approved equipment, factory-trained workmen, factory-specified methods and factory laboratory inspection, all contribute to the ultimate result; i.e., that a fleet operator can buy renewed tires or have his own casings renewed, *anywhere* in the United States, with assurance that he is purchasing work done exactly as it would be done at the factory.

Under the Kraft System the retreading operator is first trained by the factory, and must pass a rigid examination, so that every step in the actual rebuilding process will be done according to factory specifications. Samples of the work done are sent to the factory at frequent intervals for laboratory inspection. Every 30 days a Kraft specialist visits each shop to check up on the quality of the work turned out, according to General officials.

With refe ence to equipment, such as moulds, it is pointed out that all General distributors licensed under the Kraft System, have first had their moulds approved. However, the system is not limited to any particular type of mould; any modern retreading or recapping moulds can be used, providing they meet the standards set up under the Kraft System.

In addition to these factory-controlled methods, Kraft System engineers have developed some new precision equipment for this type of work. One of these, known as the "Inspectoscope" enables the operator to detect defects in the casing that might escape ordinary inspection, only to appear later, on the road perhaps, in the form of a tire failure. This device is illustrated, and consists of an electric vibrator combined with a stethescope-like hearing device. When the vibrator is applied to the various parts of the spread tire, the operator can tell, by listening, the condition of the carcass, the location of weak areas, ply-separations, bruises, etc., as these are shown up by variations in the vibrations.

CLOSE-UP of the "Inspectoscope" is shown in the upper picture. . . . The balancer is illustrated below. The text gives all details as to how these work.

Another Kraft instrument is a balancer, also illustrated. The tire is mounted on a standard, before the new rubber is vulcanized, and any condition of static or running out-of-balance can easily be detected, by means of gauges supplied. Thus it is possible to place the tire back into balance by the judicious application of a little extra tread stock, here and there, as needed. This operation is performed after the old tread rubber has been buffed off and the new tread rubber has been applied.

A special curing gauge is also used by Kraft System retreaders, to measure the toughness of the finished tread rubber. Dynamic balancing equipment is also employed, to make sure of running balance, after the vulcanization is complete.

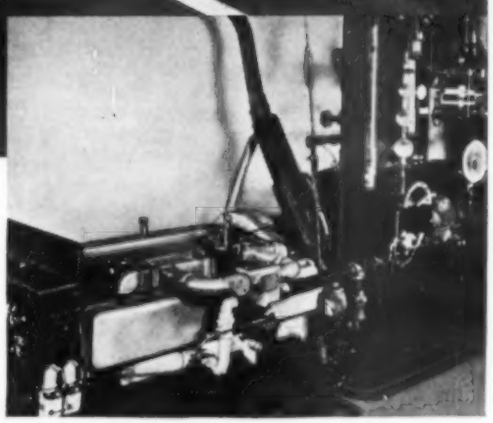
General Tire executives are quite

(*Please turn to page* 63)

But don't forget that much of the improved performance of today's trucks comes from improved gasoline.

Engines and fuels progress together. As fast as better fuels are made available by oil companies, engine designers build better engines to make use of them. In past years, the anti-knock rating of regular gasoline has climbed continuously. This in turn has allowed engine designers to increase commercial vehicle compression ratios with resultant increases in efficiency.

Now in 1940 there has been a sudden acceleration of the trend to higher anti-knock levels. The practical value of this improvement in gasoline properly applied will be reflected in faster schedules, greater mileage, and bigger payloads.



Information to enable operators to improve the performance and economy of their vehicles is secured by both laboratory and road tests on heavy duty engines at the Ethyl research laboratories in Detroit, Mich., and San Bernardino, Calif. If you have any questions about truck fuels and engines, our fleet engineers may be able to supply you with the necessary information.

Fleet maintenance men and representatives of the petroleum and automotive industries get together in these fleet conferences, sponsored by Ethyl, to discuss mutual problems. This supplements the service of Ethyl fleet engineers in aiding operators to take the best advantage of their engines and fuels.

Just as the Ethyl research laboratories cooperate with refiners to produce better gasoline, so they cooperate with truck manufacturers and operators to help them make the most of this better gasoline. Extensive road tests and the practical experience of fleet engineers have shown that there are three ways in which you can take advantage of today's improved fuels:

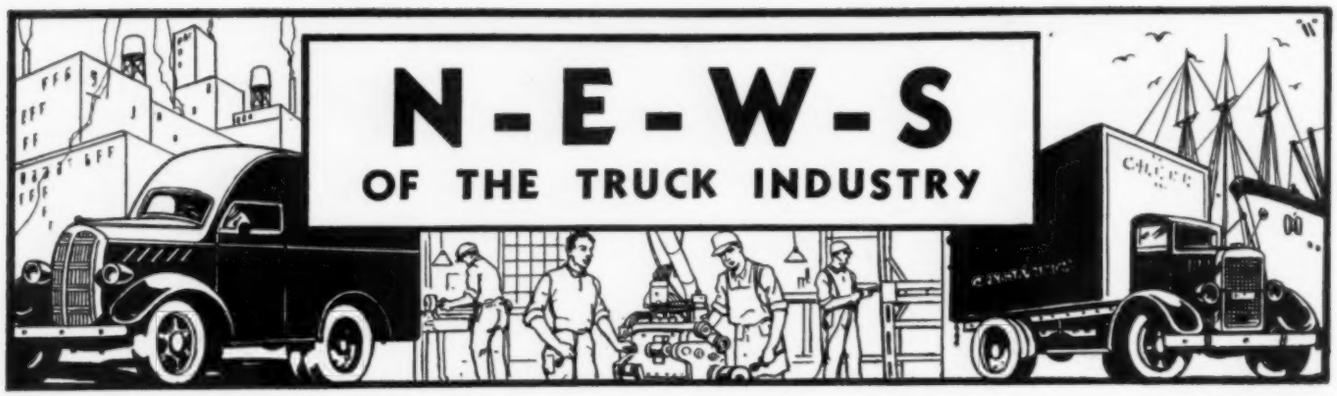
1. In older vehicles by installing high compression pistons or cylinder heads (as supplied by the manufacturer) when engines are overhauled or rebuilt.

2. In present vehicles which have high compression engines, by advancing the spark as far toward maximum efficiency as the improved gasolines will permit.

3. In purchasing new equipment by investigating the compression ratios available and specifying a ratio high enough to take full advantage of modern gasoline.

Ethyl Gasoline Corporation, manufacturer of anti-knock fluids used by oil companies to improve gasoline.

MAKE BETTER USE OF TODAY'S BETTER GASOLINE!



Can File ICC Statements Until Nov. 25

FLEET operators who wish to file briefs before the I.C.C. with reference to the present I.C.C. investigation on size and weight limitations, have until November 25th to do so. . . . An order, released on October 17, by the Commission, granted the extension of time from November 10 to 25th.

•

Marmon-Herrington Announces 1941 Line

ALL-WHEEL-DRIVE trucks to meet any hauling requirement are included in the 1941 line of trucks produced by Marmon-Herrington Company, Indianapolis, Ind., according to a recent announcement. . . . The line starts with a series of extra heavy-duty models, with power and traction on all four or six wheels, in capacities up to 70,000 pounds. . . . It also consists of factory-built conversions of all standard Ford trucks, commercial cars and passenger-cars, to all-wheel-drive. . . . Altogether, over 40 different models are available.

•

New, Larger Mack-Lanova Diesel

TO MEET demands in the heavy hauling field, Mack Trucks, Inc., New York, N. Y., announces a new and larger edition of the ED Mack-Lanova Diesel engine, designated as Model END-605. . . . . Similar in design and principle to the ED engine, the new END-605 has a piston displacement of 605 cu. in., bore and stroke of 4⅝" x 6" and operates at the same maximum speed of 2,000 r.p.m. . . . . It develops 144 h.p. at that speed, while its maximum torque at 1,100 r.p.m. is 455 lbs.-ft. . . . The new job now provides Mack with a Diesel engine said to have sufficient power to meet the heaviest hauling needs.

•

Van Norman Covering Canadian Markets

TO PROVIDE better coverage to Canadian users and jobbers, appointments of three special representatives have been announced by Van Norman Machine Tool Company, Springfield, Mass. . . . British Columbia and Alberta are covered by W. N. Abbott, with headquarters in Portland, Ore. . . . Manitoba and Saskatchewan by J. D. Ehrhardt, with headquarters in Minneapolis. . . . Ontario and Quebec are covered by R. A. Ehrhardt, having headquarters in Detroit. . . . All three men have long been affiliated with Van Norman.

Studebaker Sales Continue to Gain

FACTORY sales of Studebaker passenger-cars and trucks in September were the largest for that month in the history of the Company, according to Paul G. Hoffman, president. . . . September sales exceeded those of any month in more than 12 years, or since August, 1928. . . . Factory sales of both passenger-cars and trucks in September totalled 14,501 units, as compared with 10,710 units in the same month of 1939—an increase of 35 percent. . . . Retail deliveries in the U. S. in September amounted to 7,667 units, the best September business for domestic dealers since 1928.

•

Elastic Stop Nut in New Factory

ELASTIC Stop Nut Corporation announces the removal of its general offices from Elizabeth, N. J., to its new plant at 2332 Vauxhall Road, Union, N. J., a suburb of Newark. . . . The new plant will be used exclusively for the manufacture of Elastic

Stop Self-Locking Nuts. . . . A feature of interest is the fact that all of the steel construction is fastened with bolts and Elastic Stop Nuts, instead of rivets. . . . It is also announced that this Corporation's Houston, Tex. office has been moved to The Merchants & Manufacturers Building.

•

Truxmore Announces Eleven Models

THE LINE of Truxmore Third Axles has recently been expanded to include eleven models, making it possible to apply the correct size and model to practically any make or size of motor truck. . . . The recommended Truxmore gross vehicle weights are said to coincide very closely with those of the truck manufacturers' ratings, permitting harmony and balance. . . . Although the same basic design is used, many mechanical improvements have been incorporated in the new models.

Change in Dodge Truck Field Personnel

O. H. PERKINS, formerly Dodge special truck representative associated with the home office in Detroit, has been named regional truck manager in the St. Louis, Mo. region which embraces Missouri, Arkansas, Louisiana and sections of Illinois, Mississippi, Tennessee and Kentucky. . . . Announcement of Perkins' appointment is made by Allison Miller, St. Louis regional manager, Dodge Division, Chrysler Corporation.

•

Toledo Names Wertz Advertising Head

TOLEDO Steel Products Company announces the appointment of Herbert M. Wertz to have charge of the Company's advertising. . . . Mr. Wertz is widely known in the automotive industry, having been connected for a number of years with the industrial division of the DeVilbiss Company, also of Toledo. . . . Joe Adams, sales manager for Toledo Steel, also reports a new expansion program recently launched by his company.

•

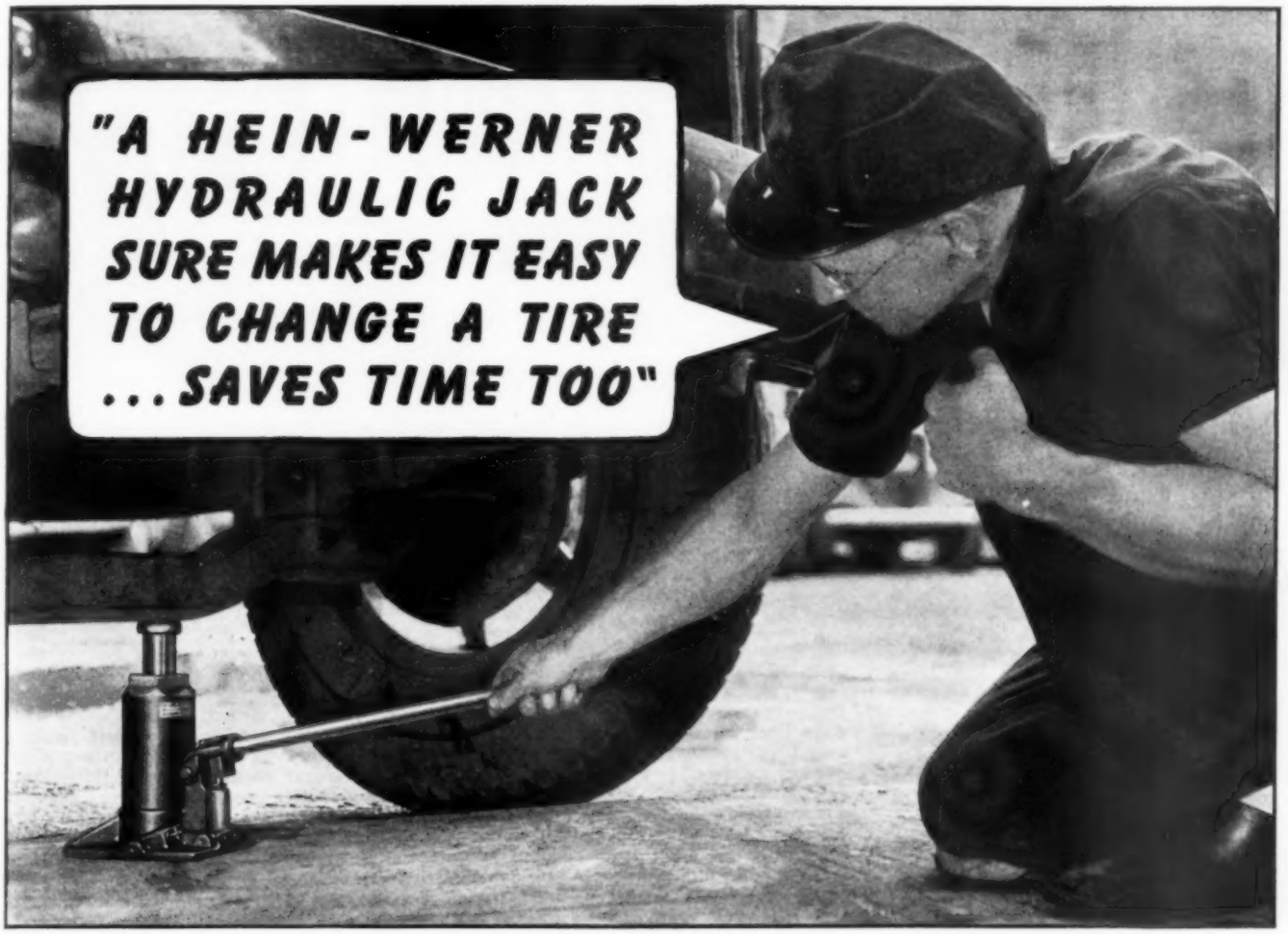
New Bulletin on Truck Insulation

A FOUR-PAGE bulletin describing the new Dry-Zero Bound-Batt Insulation for refrigerated and other low temperature truck bodies has been released by the Dry-Zero Corporation, 222 North Bank Drive, Chicago, Ill. . . . The bulletin describes the properties and advantages of the new material and lists the three forms in which it is available. In addition, the bulletin explains the simple methods of installing Bound-Batt. Copies will be sent upon request. . . . Mention of FLEET OWNER is always appreciated.

•

Reo Gets Large Army Order

AN ORDER for more than $300,000 worth of Reo trucks from the Quartermaster Corps of the United States Army, Camp Holabird, Maryland, was announced by Reo Motors, Inc., Lansing, Mich. . . . The order calls for 200 2 to 3-ton Reo chassis with 310 cubic-inch power plants. Chassis are to be equipped with 3-yard hydraulic dump-bodies. These trucks are for general administrative service, and will be used in construction work and similar activity around cantonments. . . . Delivery is scheduled for November, and production of these units is already under way.



You, too, will gain by equipping your trucks with new, easy operating

HEIN-WERNER HYDRAULIC JACKS

Truck owner and driver both gain when a Hein-Werner Hydraulic Jack is in the tool kit—ready for instant service. The ease and dependability of operating a H-W jack cuts down on "lost time" required to make tire changes on the road. And the ease and safety of operation sure make a hit with the man who pumps the jack.

All H-W Truck Jacks are factory tested at 1½ times rated capacity. Each has leak-proof hydraulic unit, and large sled base.

Complete H-W line includes 1½ ton capacity *hydraulic* jack at only $2.80 . . . 2 ton model, $2.95 . . . 3 ton model, $6.95 . . . 5 ton, $8.95 . . . 8 ton, $11.75 . . . 12 ton, $17.50 . . . 20 ton, $30.00. (All prices are net to dealer, and slightly higher on West Coast).

Hein-Werner also makes Bumper-Lift Hydraulic Jacks for passenger cars, and a full line of Service Jacks of 1¼, 1½, 2, 3 and 4 tons capacity. Also SAFE-T's.

HERE'S WHY H-W HYDRAULIC JACKS *are easier to operate*

In a split-second, mere finger pressure is transformed into a lifting force of several tons

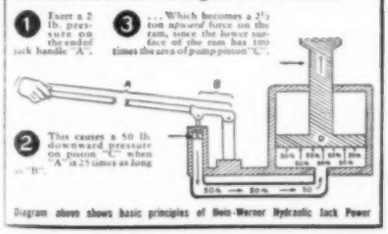

1 Exert a 2 lb. pressure on the end of jack handle "A".
3 . . . Which becomes a 2½ ton upward force on the ram, since the lower surface of the ram has 100 times the area of pump piston "C".
A
B
2 This causes a 50 lb. downward pressure on piston "C" when "A" is 25 times as long as "B".
50 lbs. → 50 lbs. → 2½ tons

Diagram above shows basic principles of Hein-Werner Hydraulic Jack Power

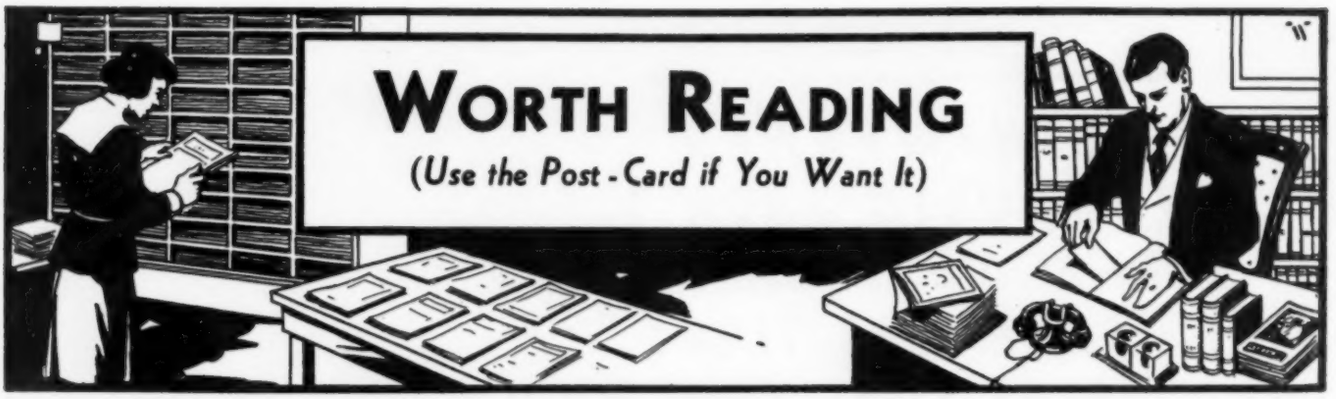
For details on complete line—ask your jobber, or write us

Hein-Werner Motor Parts Corp.
Waukesha, Wisconsin

HEIN-WERNER *hydraulic* JACKS

A COMPLETE LINE AS LOW AS **$2.80** net to dealer

5 TON MODEL is illustrated . . . Available in 9" or 10" low—each $8.95 dealer price. (West Coast $9.65).



WORTH READING

(Use the Post-Card if You Want It)

(Ten new Automotive Booklets, Selected on their Merits only)

41. QUESTIONS AND ANSWERS . . . The subject of Engine Governors is discussed in question-and-answer form, in two new folders, recently issued. . . . Here are but a few of them: *How Modern Governors Permit Full Engine Power. . . . How the Vacuum By-Pass Operates. . . . How to Get Your Drivers to Accept the Use of Governors. . . . How to Inspect Governors. . . . How to Maintain Schedules with Governed Trucks. . . . How to Install Governors on all types of Carburetors and Engines.* . . . Actual installation drawings show all details, while pictures accompany the discussions. . . . Number 41 on our post-card brings you a free copy of these folders, by mail.

•

42. ALUMINUM PISTONS. . . . That's the title of a brand-new 48-page book which fully covers the subject of Pistons *and* Cylinder Heads. . . . In addition to chapters that illustrate and describe the various types of pistons and heads, you will find much in the way of useful data on installation, fitting, clearances, etc. . . . A chapter on piston-finishes is especially interesting; likewise a chapter telling how to get the most out of aluminum cylinder heads; instructions for tightening, etc. . . . There's no advertising matter in this book, which will be *mailed*, free, if you place Number 42 on our post-card.

•

43. STORY OF COTTON. . . . Here's an unusually interesting 52-page book that is a little *different* than those usually listed here. . . . It tells the story of cotton, and its application to many different industries. The authors take you right through the many processes, from the planting, picking, ginning, weaving, etc., all along to the finished product. . . . Special attention is given to the subject of cotton cord for truck tires, which should interest most fleet men. . . . Number 43 on the post-card brings this highly educational book, *free*, by mail.

•

44. "COMPOUND NO. 32". . . . . A new booklet illustrates and describes Oakite's latest product that was scientifically developed for the safe removal of hard-water scales, rust and similar deposits, from equipment, parts and metallic surfaces in general. . . . In addition to covering cooling-systems it gives instructions for descaling such things as air-compressors, boilers, condensers, heat-exchangers, pumps, refrigerating-equipment, water-meters, etc. . . . Public-utility operators should find this booklet of special interest and value. . . . Number 44 on our post-card brings a free copy, *by mail!*

•

45. TIRE-CHAIN DATA. . . . Tire-chain weather is right around the corner. . . . The latest in tire-chain data books has just reached our desk —a 16-page booklet that is brim-full of information you'll need this winter in purchasing, stocking and repairing tire-chains for your trucks, buses and cars. . . . The tables show sizes for all cars and trucks, with prices, including single and dual-pneumatic types in various link-spacings. . . . Emergency-units are also covered. . . . The subject of tire-chain repairs is also discussed, with information as to how you can easily install a tire-chain service department in any corner of the shop. . . . Number 45 brings this data-book, free, by mail. The post-card is *only* for your convenience.

•

46. "LIFT MAGAZINE". . . . We didn't say *"Life"*, although the cover and format are quite similar. . . . This is an interesting monthly house-organ, brought out by a leading manufacturer of hydraulic lifts for shop use. . . . It is well illustrated with many lift installations and in it you'll find data, from time to time, pointing out the various uses of lifts and other shop equipment of this type. . . . Since fleet operators are fast turning to the use of lifts (instead of pits) for service work, this magazine ought to be interesting to you. . . . Number 46 on our post-card means that your name will be put on the *permanent* mailing list, to receive it, *free*, just like you get this magazine each month.

•

47. BEARING LUBRICATION. . . . A 16-page booklet, full of *unbiased* lubrication advice covering every conceivable application of ball bearings. . . . Particularly useful is the simple method it shows, of determining the proper grade and viscosity of oil for various operating temperatures and bearing speeds. . . A discussion of the composition and use of greases and their suitability under different speed, temperature and moisture conditions, is especially interesting. . . . For your free copy of this little manual, just place Number 47 on the post-card, and one will come *by mail!*

•

48. CLEANING HANDBOOK. . . . This time it's Bendix who offers an attractive and profusely illustrated booklet covering the uses and origin of the new Bendix Cleaner for metal parts. . . . The principles of wetting and penetrating action are clearly explained, and the booklet is just chock-full of "how-to-do-it" information. . . . This manual goes far beyond the stereotyped "sales brochure" in giving general data and practical ideas. . . . Number 48 on the post-card, and a copy is brought by the mail-man before you realize it.

•

49. NEW MOTOR OIL. . . . In order to keep you up-to-date in the rapidly-changing picture of engine lubrication, one refiner has produced an interesting 16-page book. . . . It is well illustrated and includes some factual data showing how certain fleets have cut their maintenance costs through better engine performance and the elimination of a lot of carbon, sludge, gum and such. . . . Naturally, the idea is to interest you in their "modern" motor oil, and you can't blame them for that. . . . The book contains a minimum of laboratory data, a little promotional material (which won't hurt any of us) and some pertinent fleet facts. . . . Your checking Number 49 on our post-card will indicate *only* that you'd like a free copy, and that you'd like yours to come *by mail!*

•

50. SIX-WHEELERS. . . . The title of this 28-page book is *"Six-Wheelers, Push or Pull?"* . . . By means of pictures and short captions (just like a movie) it takes you through the evolution of the motor truck, and it contains a rather spicy discussion of which is better—a tractor-semi-trailer, or a 6-wheeler? . . . You might consider this book to be a bit biased, but since the firm that issues it makes axles for *both* types of vehicles, it is difficult to believe that. . . . This publication is guaranteed to be interesting reading matter. . . . After all, the object of this department is to provide you with late truck literature, and this certainly looks (to us) like something worth reading. . . . Number 50 brings a copy, free.

PRICES REDUCED

Mack

Now it's easier than ever before to own a Mack! Owner satisfaction has increased sales to the point where a substantial price cut is now made possible on the light capacity models—without sacrifice of traditional Mack Bulldog stamina and quality. These light Macks, Models ED and DE, give small haulers every advantage that makes the heavy-duty Macks the most famous trucks in the world. Also—reduced prices now in effect on cab-over-engine Mack models. See these outstanding truck values before you buy another truck!

*Prices are f. o. b. Allentown, Pa. Cab, body and taxes extra.

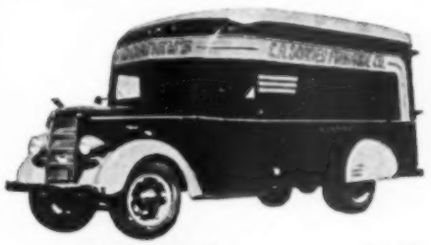
MACK TRUCKS, INC. • NEW YORK, N. Y.

The most complete line of trucks in the world
1 to 45 tons and all "heavy duty"

MODEL — ED

~~$675~~

NOW $625*



MODEL — DE

~~$790~~

NOW $735*

PRICES ALSO REDUCED
ON SIX MACK CAB-OVER-ENGINE
MODELS EEU - EFU - EGU
EHU - EMU - EQU

THAT OIL-FILTER SURVEY

● *To the Editor:* A great deal of discussion regarding oil-filters has been on a 'tis and 'taint basis. Even the best S.A.E. paper that I have seen on this subject was predicated on relatively few actual cases.

In many engine lubrication papers we have had pious discussions about the terrible contamination of oil, in general, to justify the 1,000-mile oil-change, but only one writer (to our knowledge), Fred Faulkner of Armour & Company, has advocated a measurement of dirt as an indication of when to change oil.

The survey made by FLEET OWNER magazine a short time ago is unique in the fact that it is the *only* compilation (again, to our knowledge) made among a sufficient number of cases, and of random selection, to be statistically valid and reliable as indicating the trend of practice and opinion.

Your method of obtaining data should provide a well-diversified cross-section of fleet experiences, and the number of returns is an excellent one.—*Hoy Stevens, Supt. of Maintenance, Cleveland, Columbus & Cincinnati Highway, Inc., Cleveland, Ohio.*

●

A CHAMPION FOR "FOURS"

● *Dear Mr. Fischer:* We cannot help but comment on your recent editorial regarding the advent of another "four" in the commercial truck field.

For the past ten years or more, since the sixes and eights have predominated in this market, the writer has been the target in many a stout discussion, when truck salesmen tried to cram down the idea that our thoughts were antique.

We have maintained that for the short-haul, frequent-stop, city delivery of goods like bread, milk, laundry and many other items, the economy of the four, properly chosen was much to be preferred, rather than use a high-powered, high speed truck where neither element could be properly utilized in such service.

By way of illustration, we have 39 trucks in our fleet. All of them are fours, with the exception of six trucks. Our terrain is quite flat and we are confined nearly 100% to city limits. Save two, these exceptions were the result of the lack of fours on the market.

Our argument is that the manufacturers are doing a poor selling job when they send salesmen out and sell sixes and eights, where fours should be used, just because they do not happen to be making a four-cylinder job.

This evil resulted largely because passenger-car engines were converted to truck engines and used in light trucks. Also because the public had been erroneously sold on speed and power. Therefore, the sale of speed trucks for non-speed deliveries followed in easy progression.

We believe that there is a field for *both* types of units, but support your editorial with the thought that one field should not be penalized at the expense of the other.—*E. R. Warmkessel, Secretary, Fleischmann's Vienna Model Bakery, Philadelphia, Pa.*

●

"FOOEY ON FOURS" SAYS HE

● *Dear Mr. Fischer:* In a recent issue of FLEET OWNER I note that you speak of a demand for four-cylinder motors, because their economical operation would appeal to operators of door-to-door delivery fleets. If this demand is voiced by more than one person, then more than one person should be annihilated.

Four cylinder motors made a hit with the dubs. Most any grease-neck could flatter his vanity by finding and cleaning the missing plug in a four. Many who opine on the four had their first experience with them and are now reminiscing on their low cost of operation.

This is apparently an apology for their present high costs. The greater majority of four-cylinder boosters kept poor records of their four-cylnder costs. True, records were kept and accountants knew what the costs were, but they had nothing to compare them to; so they were reasonably satisfied. If the fours could be kept running, *that* was the accomplishment, from the the mechanics' standpoint.

These mechanics have now progressed to better jobs, and are belly-aching about present operating costs as compared to previous costs, when in reality they knew *nothing* of costs when operating fours.

One party recently said: *"Let's agree with the individual who wants four-cylinder motors. Also that wood wheels with rims were superior to today's integral steel wheel and rim. . . . That 2-wheel external-contracting brakes are superior to 4-wheel internal-expanding brakes . . . That high pressure tires are superior to balloons, but that solids beat any of them. . . . That the good old chain-drives had their advantages . . . That S.A.E. 60 motor oil is and always was preferable to S.A.E. 20 oil . . . That 600W is way ahead of E.P.110 and can be proven by showing that it is easier to keep it in what ever you put it in, as it won't even run out of a barrel with a good sized hole in it, unless you don't want it to . . . That shatterproof glass is the bunk; who ever saw a teamster who couldn't face the weather! . . . And as for speed, sure the horses didn't go as fast as the trucks do, but in those days the wind used to blow harder."*

Take it from one who knows, the four was never comparable to the six or the eight. A four with abilities comparable to the modern eight uses more gas, oil and vibrates like Hell. It cannot do 40,000 miles any better than the eight does 80,000 miles. The eight has almost twice as many parts, but it is entitled to them, for the savings and satisfaction it gives the operator.

And don't forget, the fleet man who has not progressed should not be privileged to get in his say, in matters of this kind, because someone might listen to him and take him seriously, and thus impose a great headache on many good drivers of commercial vehicles. I know. I fell for it in 1932 and some of our poor salesmen are still driving some of them.—*Anonymous, Chicago, Ill.*

●

LIKED IN THE SHOP

● *To the Editor:* Just a line to let you know that every issue of your monthly magazine, FLEET OWNER, is read through. It is very much appreciated by our shop crew.—*C. H. Sease, Garage Supt., Continental Baking Co., San Diego, Calif.*

PREPAREDNESS PRODUCTION CALLS FOR *safe control*

WHITE MOTOR TRUCKS—Model 810-S. 12-ton payload capacity. TRU-STOP Emergency BRAKES optional equipment at extra cost.

THE TRU•STOP "VENTILATED" DISC MAKES TRU•STOP EMERGENCY BRAKES SERVE BETTER AND LAST LONGER

When you order **TRU-STOP Emergency BRAKES** installed you influence your operations in 3 distinct ways that are important to you.

1. You work toward a better safety record—whether trucks and buses are parked, rolling along the level, operating on steep grades or in heavy traffic.
2. You keep operating costs low because drivers hold to your schedules safely.
3. You keep down maintenance costs because (a) you reduce accidents and (b) have less brake service and less brake-lining replacement cost.

For these reasons it's worthwhile to specify **TRU-STOP Emergency BRAKES** when you order new equipment. You can also install them on units already in service. Write us for complete data and estimate of cost.

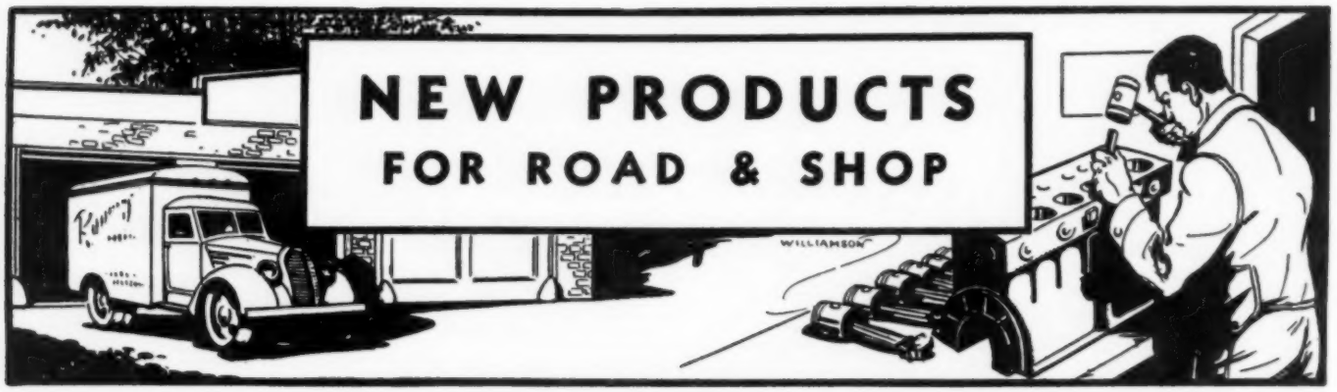
TRU•STOP *Emergency* BRAKES

In Business for Your Safety

AMERICAN CABLE DIVISION

12-252 General Motors Bldg., Detroit, Mich. • San Francisco: 630 Third St.

AMERICAN CHAIN & CABLE COMPANY, Inc.



Oil-Additive—Free Sample

THIS is a new, all-petroleum oil-additive, especially developed for fleet use. The makers claim that it will remove sludge formations, resins, tars, varnishes and gums, and prevent their forming.

"Celco is added to the crankcase oil. For dirty motors, one to two quarts is recommended, depending on capacity. After the motor has been cleaned, small quantities, approximately 2% to 5% by volume, will *keep* a motor clean, it is declared.

Other properties of this product include the increase of film-strength to any oil in which is is used. It can be used in conjunction with *any* motor oil, treated or untreated, as its all-petroleum make-up does not affect the desirable specifications of the oil in which it is used.

A free (1-quart) sample is offered to fleet men who will write for it, without obligation. . . . Address your request to C.E.L.Co, Inc., Rockefeller Center, New York, N. Y. mentioning FLEET OWNER, please.

•

Goodyear "Standardizes"

IN LINE with recent simplification standards, adopted by the tire industry and approved by truck manufacturers, Goodyear Tire & Rubber Co., Akron, Ohio, now makes available to truck and bus operators, tires of new size standards.

Essentials of the revisions include: First, a standardized design to balloon tire dimensions for both balloon and high-pressure types of tires, both constructions being retained, but duplications eliminated with new tires—a compromise between old balloon and high pressure. Second, a renaming and minor changes in cross-section of certain balloon sizes. Third, dual marking of certain balloon tire sizes, when made of extra ply construction to include high-pressure sizes, aimed at the ultimate objection of the balloon tire's adaptation to all classes of vehicle. Fourth, increases in depths of non-skid design in sizes up to and including 12.00.

The program promises added simplification for the tire and truck user as well as the merchandisers and manufacturers involved.

•

New "Bendable" Radiator Hose

A NEW TYPE of radiator hose, named "Dayflex", to eliminate the inventory problem of curved radiator hose, has been announced by Dayton Rubber Manufacturing Company, Dayton, Ohio.

Only six diameter-sizes of this new hose are required to fit 90% of curved hose applications, instead of over 150

different pieces of curved hose. Noncollapsible, due to a built-in spiral wire coil, it may be bent to any shape from a single sharp curve to a double reverse curve and is installed the same as ordinary straight hose.

"Dayflex" withstands the action of boiling water and concentrated boiling mixtures of water and various anti-freeze solutions commonly used. It is built in convenient 3-ft. lengths in the following diameters: 1¼"; 1-7/16"; 1½"; 1-9/16"; 1-3/4"; and 2". . . . For more details write R. L. Wetzel, care Dayton Rubber Mfg. Company, Dayton, Ohio, mentioning FLEET OWNER, please.

•

New "Tune-Up" Slide-Film

DELCO-REMY has announced the release of "ELECTRICAL TUNE-UP"—a 35-MM slide-film, which outlines a systematic method of checking the various units of the modern automotive electrical system.

The checks and adjustments required on the battery, cranking motor, generator-regulator system and ignition system are presented in an easily-understood manner.

Use of "Delco-Remy Dwarfs" and simple analogy provide comedy relief and at the same time clarify the checking and adjusting procedure. The film contains information on 1940 equipment and will bring service operators up to date for the winter tune-up program. Reader's script is furnished with film.

The film is being released through Automotive Electric Association and United Motors Service, Detroit, Michigan. . . . For information as to a showing, address Foust Childers, c/o Delco-Remy Division, Anderson, Ind., mentioning FLEET OWNER, if you don't mind.

•

Link-Belt Roller Bearings

ABOUT a year ago Link-Belt Company, Indianapolis, Ind., announced that it would shortly enter the automotive replacement market with a line of "Shafer" radial-thrust, self-aligning roller bearings for front-wheel, rear axle and differential applications.

Harry Riesser, manager of replacement distribution, reports that they have completed their distributor organization and are already enjoying a volume of business from fleet operators and other transportation units.

Stocks are now in the hands of Link-Belt automotive roller-bearing warehouses, located in all parts of the country. . . . For catalog listing and other information, write directly to Harry Riesser, c/o Link-Belt Company, Indianapolis, Ind., mentioning FLEET OWNER, please.

From 2-Wheel Brakes with "boosters" to 10-Wheel Brakes with Bendix B-K Controlled Vacuum Power Braking *is a long, long way . . .*

and BENDIX B-K *has led every step!*

BK POWER BRAKING A BENDIX PRODUCT

So gradual has been the process of steady refinement through which power braking has passed, that many veteran truck men scarcely realize how far this famous life-and-property-saver has progressed. To thousands, Bendix B-K is still familiarly known as "the booster."

But bigger, heavier, vehicles, forced to ever-faster travel in ever-thicker traffic, have called for more and more *power* on the brake pedal, to reduce the driver's muscle-work. And on trailers, of course, "full power" braking units have always been necessary, since there is no mechanical connection with the tractor brake pedal.

Now, with ample reserves and time-proved reliability, the modern B-K Vacuum Power Brake installation demands from the driver virtually no physical effort, other than the little needed to operate the control valve.

Even this, in the eventual full development of B-K Controlled Vacuum Power Braking, will be absorbed. Braking application becomes merely a matter of moving the control, whether pedal or lever, to the point desired—an effortless operation.

Bendix B-K continues to pioneer, as it has through all the years, new refinements, new standards of efficiency and reliability.

LOOK TO BENDIX B-K POWER BRAKING FOR TODAY'S LEADERSHIP . . . *and TOMORROW'S*

Full Power is on the way

BENDIX PRODUCTS DIVISION OF BENDIX AVIATION CORPORATION, SOUTH BEND, IND.

Sealed-Beam Fog Lamps

ARROW Sealed Beam Mazda Fog Lamps incorporate the well-known all-glass type lamp unit, built into chromium-plated shells, applying the sealed-beam principle to auxiliary lighting.

The Mazda all-glass lamp unit has no internal bulb. It is claimed not to deteriorate with age and to last longer than bulb-type lamps. Standard equipment includes an amber lens unit, chromium plated brass shell and rim, fully-adjustable bracket, fused dash switch with tail-light hook-up. Two lamp body styles are offered, round and bullet-shaped.

For more details, list prices, discounts, etc., address Arrow Safety Device Co., Medford, N. J., mentioning FLEET OWNER, if you don't mind.

•

"Safety-Fill" Nozzle

RECENTLY placed on the market is a new "Safety-Fill" nozzle for gasoline delivery hose, featuring an automatic shut-off.

When this nozzle is inserted into the vehicle's fuel-tank, it functions exactly like any ordinary nozzle. However, when the level of the fuel reaches the end of the nozzle, the flow of gasoline shuts off *automatically*, thus preventing over-fillng.

Advantages claimed are faster filling, with absolutely no spill-overs, resulting in greater economy and the elimination of fire hazard. . . . For more details address Opaco Division, American Machine & Metals, Inc., East Moline, Ill. . . . You'll mention FLEET OWNER, won't you?

•

Schaefer Fountain Brush

REDESIGNED for greater efficiency and ease of operation, the new Schaefer Fountain Brush is especially adaptable for washing all types of trucks, buses, trolley-cars, etc.

The unit consists of a 5½-inch round brush-head, set with the finest Chinese or Russian bristles. Attached to this head is a specially-designed spray and a light-weight aluminum pipe. A shut-off valve is conveniently located at the lower end of the pipe, so that the operator can control the flow of water to the brush with a minimum of effort.

Pipes can be supplied in 4, 6, 8 or 10-foot lengths. Rubber guards on the pipe—one below the head and the other just above the shut-off valve—prevent water from running down the pipe onto the hands of the operator.

Other features include hard-rubber sliding hand-grips, extra wide and full brush-head. The bristles are secured in the round rubber block with rust-proof wire. The latter is attached

to the aluminum head by means of three brass bolts and wing-nuts, and is adjustable to three positions.

The unit is supplied with a 5-inch length of hose, with standard couplings to fit ⅞-inch hose. . . . For more details and prices address Schaefer Brush Mfg. Co., 117 W. Walker St., Milwaukee, Wis. . . . You'll mention FLEET OWNER, won't you?

•

Free Cost-Record Book

"*OPERATING Record for Motor Trucks and Buses*," is the title of a book published by the Dodge division, Chrysler Corporation. This book seems to grow in popularity each year among truck users, according to company officials.

The book, containing double-spread ruled pages for each month of the year, allows the truck operator to set down daily expenditures of gasoline, oil, repair and maintenance costs, as well as hours of operation, mileage, stops, etc. At the end of the month, the truck owner has a concise and easily analyzed record of his truck operating costs. Pages are also provided for a record of indirect costs such as taxes, license, garage, insurance, etc. and a summary of total expenses for the year.

Distributed free of charge, the book can be obtained by addressing a request to the Advertising Department of Dodge Division, Chrysler Corporation, Detroit, Michigan, mentioning FLEET OWNER, if you please.

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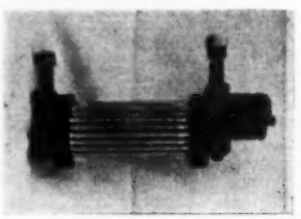
New Oil-Cooler



HERE is a brand-new oil-cooler for automotive and tractor engines, so constructed that it keeps the oil between 150 and 160 degress F. at all times. It is electrically controlled.

This device is so constructed that it does not have any connection with the radiator, the cooling water, or any of the manifolds, as it is a separate unit which can be installed between the radiator and the grille, or behind the radiator, as desired. It is said to be compact and easy to install.

For full particulars address Walter Kohlmann, 2605 W. Oklahoma Ave., Milwaukee, Wis., mentioning FLEET OWNER, please.

•

New Series Timken Bearings

THE Timken Roller Bearing Company has put into production a new bearing series of the standard "SS" type.

The first bearing in this series is 9285-9220, with a cone bore of 3", o. d. of 6⅜" and width of 1-15/16". At 500 r.p.m. this bearing has a radial capacity of 6255 lbs., and a thrust capacity of 8710 lbs.

The 9100, 9300 and 90000 series bearings of the "SS" type have also been redesigned to reduce the outside diameters and widths of each series while still maintaining the same load-carrying capacities. Two cone bores of 2-7/16" and 2-11/16" are available in the 9100 series. Two different bores of 3" and 3-5/16" are available in the 9300 series and one cone bore of 3-13/16" in the 90000 series.

These series, in addition to those now available in the "SS" type, provide a wide range of capacities, varying in cone bores from ¾" to 12½". The "SS" series are single-row bearings with steep cup and cone angles. They are designed primarily to handle those loading conditions where thrust loads are large compared to the radial loads. Their design embodies the primary Timken principles of construction, which assures true rolling motion, and positively-aligned rolls, which prevent roll skewing. The multiple perforated Timken cage retains the rolls equally spaced around the bearing periphery.

70 MILLION MILES WITHOUT A TIRE FAILURE

TWO YEARS without a tire failure — blow-out or sidewall failure that could be blamed on the tire is the record of a prominent Fleet Owner*, who uses Bibb HR Cord tires exclusively, after testing them all.

Every year he buys approximately 700 tires for his 70 trucks and trades in the same number after they have given a combined total of 35,000,000 miles of service on original tread. Each year he buys tires built with Bibb HR Cord because they give lowest cost mileage and trouble-free service. Gross weight of his trucks range from 13 tons to 17 tons and they travel over all kinds of roads in half a dozen states.

This Fleet Owner is one of many who have found that HR Cord cuts tire costs and speeds deliveries.

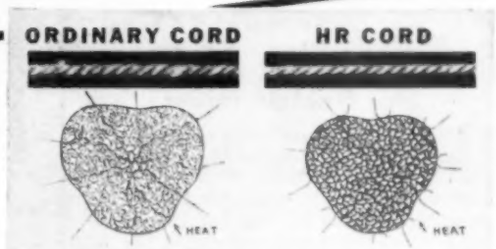
In Bibb HR Cord the fibers are *bonded* and compacted into a high density, thinner, stronger and more flexible cord. Unlike ordinary cord the fibers do not slip.

The exclusive Bibb HR process adds tremendous service strength, reduces friction, resists heat generation and prevents tire growth and blow-outs. The tough HR Cord carcass, which outlasts any tread, is ideal for recapping because there is no harmful distortion of the construction of the tire.

*Name furnished on request.

BIBB
The First Name in
TEXTILES

BIBB MANUFACTURING COMPANY, MACON, GEORGIA



Magnified cross-section of ordinary cord. Fiber slippage occurs because fibers are held together only by twist and friction.

In HR Cord the fibers are bonded and compacted into a high density, thinner, stronger and more flexible cord. Fibers can not slip.

Insist upon Genuine

HR CORD

TRADE MARK REG. U.S.PATENT NO. 2103218

Bibb Manufacturing Company F-111
Macon, Georgia

Gentlemen: Where can I buy tires made with Bibb HR CORD? [ ]

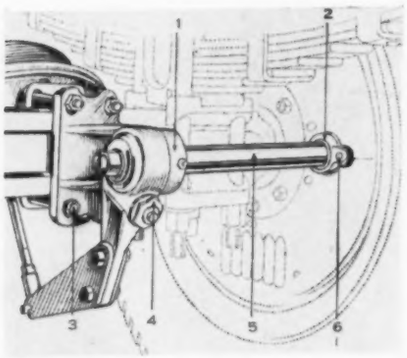
I am interested also in V belts. [ ]

*Name*_____

*Address*_____

New Fruehauf Slack-Adjuster

A NEW, simple, and effective slack-adjuster for brakes is now standard equipment on all Fruehauf trailer units. The new design eliminates lock-nuts and prevents improper setting.



It uses an eight-tooth ratchet which is easy to handle. Each notch in the ratchet takes up .008 inch clearance on the brake-shoe. The new slack-adjuster also has the additional advantages of being light in weight and being absolutely dust-proof, according to the makers.

The interesting features of the slack-adjuster are shown in the sketch. . . . Referring to it: (1) Self-aligning ball-bearing for shaft. (2) Dust-seal for needle-bearing. (3) Brake adjusting nuts. (4) Slack adjusting nuts. (5) Heat-treated, alloy-steel, integrally-forged camshaft. (6) Lubrication fitting for needle-bearings. . . . If more information is wanted, write to Les Allman, c/o Fruehauf Trailer Company, Detroit, Mich., mentioning this announcement in FLEET OWNER, please.

•

New Flashlight Holder

THE USES of this new flashlight holder are as extensive as those of the flashlight itself. With it, both hands can now be used for the job to be done, instead of holding the flashlight with one hand.

Truck drivers (all of whom carry flashlights) are expected to be interested in it, according to the makers. In case of trouble on the road at night, both hands are generally needed, and the universal strap, which comes with the holder, permits mounting the flashlight in almost any position on the body, or anywhere.

This holder is also expected to be valuable for use by meter-readers, mechanics, service men, fishermen, campers, hunters, etc. The direction of the light can be changed—up or down, right or left, as desired. A single buckle provides quick adjustment.

Fleet operators who might be interested in this new product are invited to correspond directly with E. M. Spelman, c/o The Homobile Company, 7801 Madison Ave., Cleveland, Ohio, mentioning FLEET OWNER, please.

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New Ajax Service Jacks

FEATURING "Free-Action" frame, "Armor-Plate" chassis, "Double-Feature" handles and many other new developments, Ajax Auto Parts Company of Racine, Wis., announces 3 low-priced service jacks: the Roadster, a one-ton capacity mechanical jack; a 2,500-lb. capacity "Quick Service" hydraulic jack (illustrated);

and a 3,000-lb. capacity "Quick Service" hydraulic jack.

"Armor-plate" construction, which permits reduction of weight without reduction of capacity, is a method of ribbing and shaping the chassis and lifting arm to add strength without dead weight.

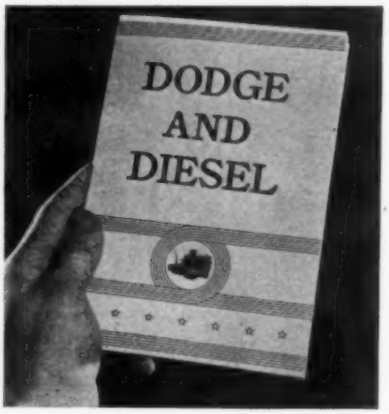
The new Ajax "Free-Action" frame, is said to eliminate permanent twisting and springing which may be caused by lifting on irregular surfaces.

Light-weight stand-up and removable handles make these new Ajax jacks useful for driveway, shop and road service. A simple twist of a thumb-screw removes the handle when loading the jack in the trouble car. When not in use, the jack handle stands up straight, out of the way. All three jacks have full-turning handles for positive control of the load.

The pump on the two hydraulic models is centered to prevent side strains. An automatic safety-valve, set at the factory, prevents damage when the jack is overloaded.

Free Diesel Booklet

COMPLETELY revised and containing graphic new illustrations, the 1940 edition of *"Dodge and Diesel"* has recently come off the press.



In this widely-distributed booklet, dedicated to the attainment of greater efficiency and economy in the operation of heavy-duty trucks, is revealed for the first time, publicly, a sharp increase in the power and torque rating of current production Dodge-Diesel engines. Brake horsepower at the governed speed of 2600 r.p.m. has been increased from 95 to 100 and torque from 226 to 240 pounds feet at 1200 to 1300 r.p.m. These power increases, it is said, are due to improvements and advancements in minute details of combustion and fuel injection.

Written by Dodge-Diesel engineers in collaboration with sales executives, the *"Dodge and Diesel"* booklet is devoted to an explanation of Diesel engines in general and the Dodge Job-Rated Diesel in particular. All technical points of Diesel design and construction are described in simple language easily understood by all.

The booklet is available, free, by writing directly to Dodge Truck Division of Chrysler Corp., Detroit, Mch., mentioning this announcement in FLEET OWNER.

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Monarch "Brakehold"

HERE is a brand-new device that will hold a vehicle on any grade—up or down—by locking the brakes. Finger-tip control at the steering-wheel provides easy engagement and disengagement.

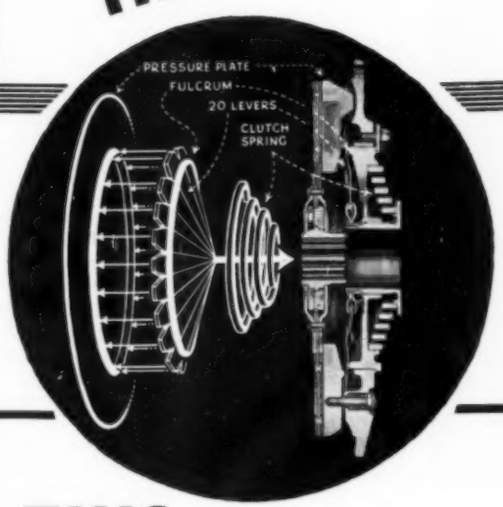
"Brakehold," as it is called, is a manually-operated check-valve inserted in the hydraulic brake system between the master-cylinder and the wheel brakes. The valve mechanism attaches at the bottom of the steering-column and connects with the master-cylinder. The control-lever is mounted at the top, under the steering-wheel.

This new type of hill-holder will be especially valuable on inclined stops for traffic-lights, railroad-crossings and traffic. It can also be used as a parking-brake in multi-stop fleet service. . . . For more details address M. J. O'Neill, c/o Monarch Governor Company, 1832 Bethune Ave. W., Detroit, Mich. . . . You'll mention FLEET OWNER, won't you?

A Sick Clutch Makes the Whole Truck Sick

Insure Longer Truck Life . . .
End Damaging Shock and Strain
WITH A

LIPE
HEAVY-DUTY CLUTCH



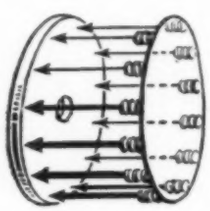
● You know the symptoms of an ailing clutch: The weakness and shivers . . . . the sudden burning fevers in the clutch facing . . . . then the terrific shock and jar . . . . and finally, the all-gone empty feeling when something gives way. All this can occur in the ordinary clutch whenever the spring-tensions become uneven. The pressure plate cocks and small patches of the facing touch first . . . . then the entire clutch takes hold with a bang.

LIPE Heavy-Duty Clutches *Never Grab*

● A glance at the diagram will convince you that Lipe Heavy-Duty Clutches can't cock or grab . . . . can't throw "shock loadings" onto your drive line. Lipe's patented construction keeps the pressure surfaces parallel. The clutch takes hold so smoothly that there's no shock . . . . no stripping of gears . . . . no shearing of splines, jamming of universals, scuffing of bearings, grinding of tires. Yet the engagement is as positive as a meshed gear.

That's why Lipe Heavy-Duty Clutches give longer truck life as well as clutch life . . . . longer service between tear-downs. They reduce costly truck layups, drive-line repairs and clutch relining and adjustment.

THIS . . . **the pressure of ONE SPRING equally divided and distributed all around the plate by 20 equally spaced pressure levers.**



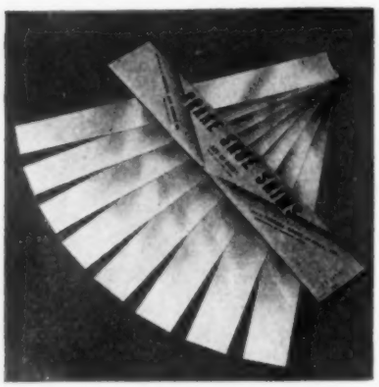
INSTEAD OF THIS . . . . *a series of SEVERAL SPRINGS, often of unequal strength, pressing with different tensions against different points on the pressure plate. It is this uneven pressure which tends to cock the plate, causing localized burning and grabbing or shock loading.*

WRITE today for your free copy of the latest Lipe Service Manual. Find out how Lipe clutches can be adjusted for wear merely by removing a shim—no special tools required.

W. C. LIPE, INC. Syracuse, N.Y.

Brass Brake-Shoe Shims

A NEW type of brake-shoe shim has been announced by the Laminated Shim Company, Inc., Long Island City, New York.



These new brass shims are designed to give better adjustment and improve service when a new set of brake linings is installed, that has to be shimmed slightly in order to obtain correct fit.

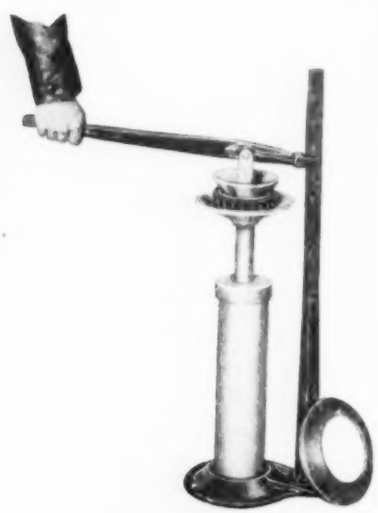
These brass shims are obtainable in widths for various brakes. They are of .025-inch thick brass, 18 inches long, and are available in 1½, 1¾, 2, 2¼ and 2½-inch widths. Each set of eight shims is conveniently packaged in a stout envelope container, plainly marked with shim size.

For further information regarding these new brake-shoe shims, get in touch with the Laminated Shim Company, Inc., Long Island City, N. Y., attention of Owen C. Jones. . . . You'll mention FLEET OWNER, won't you;

•

Truck Bearing Packer

THE NEED for fast and positive bearing lubrication is met by the



packer illustrated. It is an item of the well-known Croft manufacture, and is distributed exclusively by Ahlberg Bearing Company, Chicago, Ill.

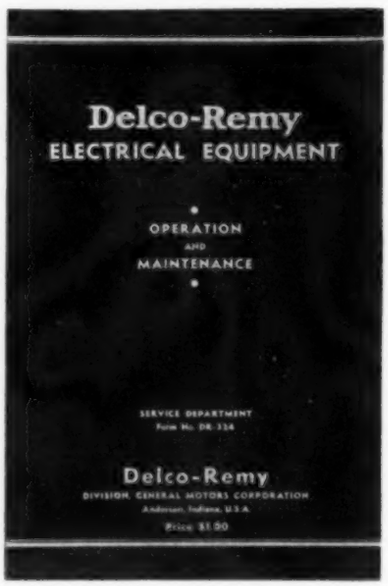
It thoroughly lubricates a large bearing in one easy operation and, at the same time, conserves grease. The unit is unconditionally guaranteed for one year, but will last a lifetime, and is built to take bearings from 1½" i.d. to 7" o.d.

Further details may be obtained from Ahlberg Bearing Company, 3025 W. 47th St., Chicago, Ill. . . . When writing, you'll mention FLEET OWNER, won't you?

•

Delco-Remy Service Manual

THE SIXTH edition of the Delco-Remy Operation and Maintenance Handbook has recently been released. This latest revised, 144-page edition, 8¼" x 10¾" in size, contains factory service bulletins covering operation and maintenance of Delco-Remy electrical equipment,



including the 1940 equipment, and is illustrated by more than 200 pictures and diagrams.

It also contains 27 pages of test specifications on starting motors, distributors, generators, and regulators. Current and voltage regulation is fully discussed, both as to operation and methods of checking and adjusting.

It answers such questions as: How and why does a regulator work? . . . What should be done when the generator stops charging? . . . How can new generator brushes be seated in five seconds? . . . How can the ignition system be balanced to cure contact-point pitting? . . . What is the recommended procedure for taking care of a battery?

These, and hundreds of other questions which come up every day in electrical service work, are answered in the new handbook. Every electrical service man will find this handbook an authentic source of service information. It has been made available through the Delco-Remy field service organization, United Motors Service, 3044 W. Grand Boulevard, Detroit, Michigan. The price is $1.00.

Casco "Sealed-Beam" Lamps

CASCO Products Corporation, Bridgeport, Conn., announces two new auxiliary driving lamps, incorporating the sealed-beam principle in them.

Model 205 is a driving light; Model 205-A is a passing light. Both are styled to match the modern trend in lamps, and are designed to augment the road-lighting facilities of early as well as late model vehicles.

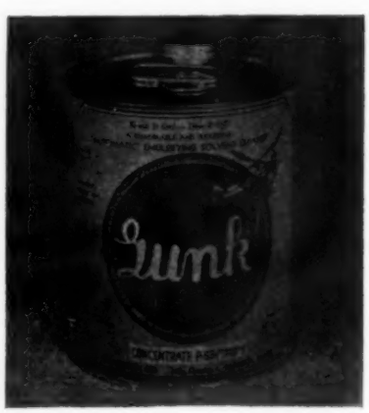
Full particulars may be obtained by writing to Casco Products Corporation, Bridgeport, Conn. . . . We always appreciate it when you mention FLEET OWNER.

•

New "Gunk" Now Improved

IMPROVEMENTS are reported by the makers of "Gunk"—general purpose garage and chassis degreasing concentrate, for 1940, through the use of new synthetic alkyl-phenol components.

The new, improved product, P-96 (phenolic type) Gunk will be sold as usual through wholesale distributors.



It is said that one gallon of the concentrate will make ten gallons of self-emulsifying degreasing solvent, when diluted with nine parts of 6-cent light fuel-oil distillate. This is a 60 percent increase in concentration.

For more details address A. F. Curran, c/o The Curran Corporation, Malden, Mass., mentioning FLEET OWNER, if you please.

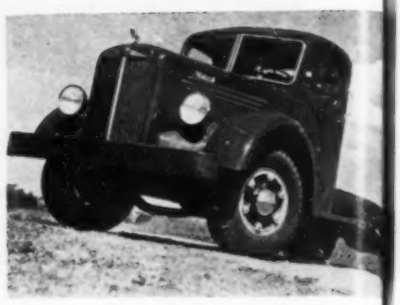
The

ALL-AMERICAN CONTROL

★★ SERVING ALL AMERICA ★★

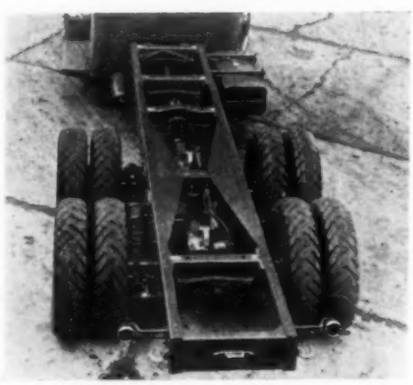
With American defense rapidly assuming a rightful potency, it is gratifying to know that the same tireless guardians which have given so much to the safety and efficiency of the world's finest transport system, stand instantly ready to serve America in any emergency ★ Whether it be the accelerated movement of vital materials or the control of mechanized combat units, the position of the Bendix-Westinghouse Company is one of alert preparedness ★ Tuned to meet any eventuality squarely, Bendix-Westinghouse Air Brakes have, through countless millions of miles of peacetime service, prepared for any role in which they may be cast ★ For twenty years they have served American transportation faithfully . . . This privilege has been enjoyed and, to a man, the Bendix-Westinghouse Company intends to continue it indefinitely. To this end, ever mindful of our responsibility to the nation, we have set our course inexorably.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO., PITTSBURGH, PA.



THREE of Mack's new heavy-duty models described in this article, from left to right: LM Six-Wheeler, LJT Tractor and LF Truck.

MORE NEW HEAVY-DUTY MACKS FOR 1941



ALL four-wheel-drive bogies on the new Mack 6-wheelers feature a "power-divider" which provides a bias of torque for the axle having the best traction.

IN ADDITION to the new LM truck and LMT tractor models recently announced, Mack Trucks, Inc., Long Island City, N. Y., also offers a new series of truck, tractor and six-wheel models, expressly designed for heavy hauling.

Included in this new series, now in production, are two truck models, the LF and the LJ. Mack is also offering three new tractor models designed exclusively for tractor service: the LFT; the LHT, particularly designed for the hauling of heavy train loads; and the LJT. Rounding out this new series of Macks are three new Mack six-wheelers, the LF six-wheeler, the LH six-wheeler, and the LM six-wheeler.

These new models are offered in a variety of wheelbase lengths, while the tractor models, besides their standard wheelbase length, are also available in a special wheelbase length for sleeper-cabs.

The new LF truck is powered by a six-cylinder EN 405 Mack Thermodyne engine developing 118 h.p. at governed speed of 2500 r.p.m. Torque developed is 300 lb.-ft. at 1000 r.p.m. In place of this engine which is standard, Mack is offering, as an optional extra in the LF, a six-cylinder, EN 457 Mack Thermodyne engine which develops 131 h.p. at governed speed of 2400 r.p.m. and 338 lb.-ft. of torque at 1100 r.p.m.

The new LJ truck is powered by the six-cylinder, EN 457 Mack Thermodyne engine. Available as optional extras in this truck are the EO Mack Thermodyne engine developing 142 h.p. at governed speed of 2200 r.p.m. and 378 lb.-ft. of torque at 1000 r.p.m., or, if Diesel power is desired, the model ED Mack-Lanova Diesel engine which develops 131 h.p. at governed speed of 2000 r.p.m. and 381.5 lb.-ft. of torque at 1300 r.p.m.

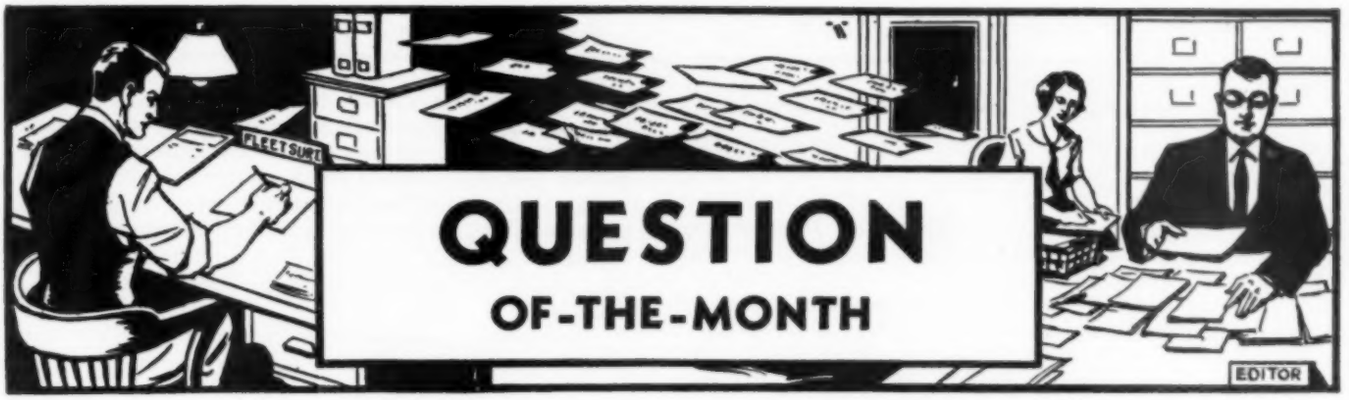
The model LFT Mack tractor is powered by the EN 457 Mack Thermodyne engine. The new LHT Mack tractor, a unit designed particularly for hauling heavy train loads, is powered by the EO Mack Thermodyne engine. Optional extra engine installations for this new tractor include the EP and EY Mack Thermodyne engines, developing 160 h.p. at governed speed of 2100 r.p.m. and 175 h.p. at governed speed of 2000 r.p.m. respectively. Two Mack Diesel engines are also available for installation in this tractor model at extra cost, the ED Mack-Lanova Diesel, and the new model END 605 Mack-Lanova Diesel which develops 144 h.p. at governed speed of 2000 r.p.m. and 455 lb.-ft. of torque at 1100 r.p.m. Lastly, the new LJT Mack tractor is offered with the EO Mack Thermodyne engine as standard and the ED Mack-Lanova Diesel as an optional extra.

Of the new six-wheelers, the new LF six-wheeler is powered by the EN 457 Mack Thermodyne engine. The LH six-wheeler is offered with the EO Mack Thermodyne as a standard power-plant, the Thermodyne models EP and EY, and the Mack-Lanova models ED and END 605 Diesels being available for this unit at extra cost. The new LM six-wheeler is powered by the EO Thermodyne as standard, and as optional extras, either the EP Thermodyne or the model ED or END 605 Mack-Lanova Diesels, for those desiring Diesel power, may be installed.

All of the Mack Thermodyne engines powering these new models are of similar design. Crankshafts have seven main bearings, are fully counterbalanced on every throw, and are of drop-forged, case-hardened, low-carbon steel. Cylinders are chrome-nickel alloy semi-steel, heat-treated and are cast-in-block, with two detachable heads. All crankshafts have a Lanchester-type vibration damper. They are 3½" in diameter at the main bearings. The connecting-rods are of drop-forged, chrome-molybdenum steel with a 35-degree cap angle. Main bearings, of the thin shell precision type, are interchangeable. Exhaust valve seats feature "permafit" inserts of niferrite, faced with stellite, and the exhaust valves are of stablite material.

Drives in every case are through dry, single-plate clutches, through either 5-speed direct or 5-speed overgear transmissions. In every case a Mack 10-speed duplex transmission is available. Final drive on the

(*Please turn to page* 65)



VEHICLE PAINTING

THESE monthly questionnaires enable us to come right back at you with *practical* experience information, rather than a lot of theory. . . . It is a dandy method of getting a cross-section on fleet practice.

The questionnaire is the *first* step. In return for a few minutes of your time in filling it out and sending it back to us, you will receive *your own* private, personal copy of the complete picture. We do all of the *hard work*, digesting and totaling the replies—and *you* get the *benefit!*

Names of fleets or executives are *never* mentioned or disclosed in any way. So don't hesitate to participate. You can *trust* us! The only thing we give out is the total, the trend, etc.

Once you participate, we feel sure that you will do it regularly. Your cooperation is appreciated.—H.C.F.

(Please tear out and mail to The Editor, Fleet Owner, 90 West St., New York, N. Y.)

Question No. 112—Vehicle Painting

Where do you have your vehicles re-painted? ☐All in our own shop; ☐All done outside; ☐Some of each

How often (*average*) are the vehicles in your fleet repainted? (*Please indicate below*)
Trucks — Every..... Years;
Buses — Every..... Years;
Pass. Cars—Every..... Years;
NOTE: If no schedule is followed, please explain.....

Which method of painting is used on bodies and other large surfaces? (*Please check below*)
☐Spray; ☐Brush; ☐Both methods.

Which method of painting is used on fenders and other small surfaces? (*Please check below*)
☐Spray; ☐Brush; ☐Both methods.

What TYPE of finish do you use? (Synthetic Enamel, Lacquer, etc.) (*Please indicate below*)
On Trucks?..... On Buses?..... On Passenger Cars?.....

What method of paint-removal do you use, when necessary? (*Please check below*)
☐Burn-off with torch; ☐Hot-strip with chemicals; ☐Sand-blast
☐Regular paint-remover; ☐Cold-strip with chemicals; ☐Other methods? .....

What equipment do you have for re-painting your vehicles? (*Please check below*)
☐Air-Compressor; ☐Sanding-Machine ☐Electric-Sprayer
☐Spray-Guns; ☐Polishing Machine Other shop-equipment for painting?.....
☐Spray-Booth; ☐Sand-Blast Outfit .....

Do you ever apply new paint over the old finish, when conditions permit? ☐Yes; ☐No

If so, do you use a special primer as a first-coat? ☐Yes; ☐No; ☐Sometimes

Do you use masking-tape for color-separation, mouldings, etc.? ☐Yes; ☐No

About how many gallons of paint, clear, etc. do you use per month?..... (*Rough figure*)

Do you have a standardized color-scheme for your fleet, or any special color combination? ☐Yes; ☐No

What are your principal colors? (*Please indicate below*)
Main Color..... Second Color..... Third Color.....

What is your source of supply on automotive finishes? (*Please indicate below*)
☐Automotive Jobber ☐Retail Store ☐Vehicle Dealer or Branch
☐Paint Jobber ☐Paint Manufacturer ☐Others? .....

Which MAKE of automotive finish do you prefer?..... (*Confidential, of course*)

How many vehicles in your fleet? (*Please indicate below*)

Trucks..... Tractors..... Trailers..... Pass. Cars..... Buses..... Miscellaneous.....

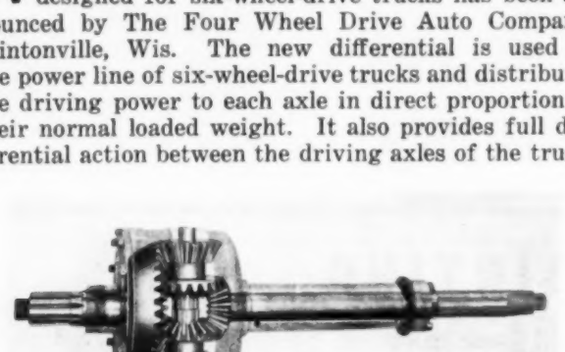
Note: If you cooperate with us and fill out this questionnaire, you will be entitled to a tabulated report covering all of the answers.

Swap your transportation experience with other fleet operators in this easy, convenient way. We do the work. You get the benefit.

Name of Firm.....
Address .....
City and State.....
Your Name ..... *Position*.....

New Differential for Six-Wheel-Drive Trucks

A NEW power-proportioning differential especially designed for six-wheel-drive trucks has been announced by The Four Wheel Drive Auto Company, Clintonville, Wis. The new differential is used in the power line of six-wheel-drive trucks and distributes the driving power to each axle in direct proportion to their normal loaded weight. It also provides full differential action between the driving axles of the truck.



In a six-wheel-drive truck with dual tires on the bogie axles, the gross weight is normally arranged so that each of the ten tires on the truck carries its proportionate share of the load. Thus ⅕ or 20% of the gross load is carried on the two tires of the front axle, while ⅘ or 80% of the gross load is carried on the eight tires of the rear bogie. The new differential provides for a power division so that exactly 20% of the driving torque is delivered to the front axle and 80% of the driving torque is delivered to the rear bogie.

The basic principle of this new power-proportioning differential is similar to the common differential that divides the power equally, however, the side-gears have unequal radii, and the differential pinion gears are arranged to meet the unequal-sized side-gears. The ratio between the pinion and the side-gears operate as a continuous lever in such a manner that the same force applied on the shorter leverage of the differential side-gear connected to the front axle reduces the torque applied to that axle, while the same force applied to the rear leverage of the larger side-gear connected to the rear bogie, increases the torque to the two driving axles of the bogie.

In the new FWD differential the gearing is arranged so that a 4-to-1 ratio is obtained. Since the balance secured is by gearing, it provides a continuous leverage. In other words, no movement between the gears occurs except where differential action occurs, such as is the case in rounding corners, going over uneven ground or the like.

Advantages claimed by the manufacturer include, (1) Increased draw-bar pull with free differential action. (2) Added hill-climbing ability. (3) Elimination of front-wheel spin. (4) Increased tire mileage. (5) Increased all-around performance. (6) Lower operating and maintenance costs.

●

New Booklet on Forecasting Sales

PLANNING ahead for production, expense control and employment stabilization are a few of the purposes mentioned by 48 companies in *"Forecasting Sales"*, a new 55-page report issued by the Policyholders Service Bureau, Metropolitan Life Insurance Company.

The report analyzes the factors considered by contributing companies in making forecasts, such as: conditions within the company; conditions within the industry and customers' industries; and the general business outlook. The sources most frequently used to gather this information are described.

The study discusses the various ways companies fix responsibility for forecasts as well as the statistical methods used to draw up data and make analyses. The periods covered and interim breakdowns are also discussed.

Forecasting methods, the report states, are most effectively presented by concrete examples. Half the report, therefore, is given over to case studies which illustrate how 19 individual companies are handling forecasting.

Copies of this report are available free to executives on request. Address Policyholders Service Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York, N. Y.

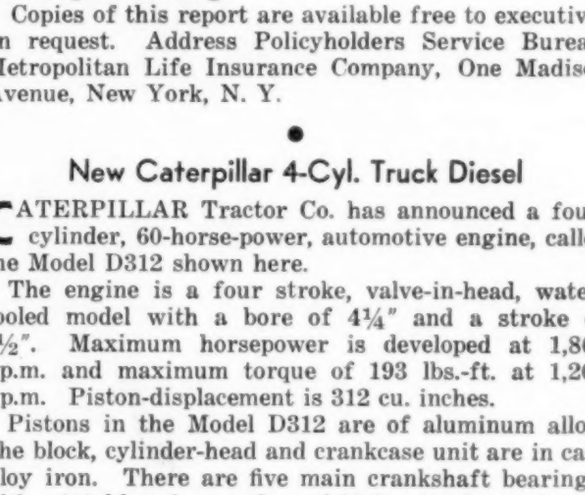
●

New Caterpillar 4-Cyl. Truck Diesel

CATERPILLAR Tractor Co. has announced a four-cylinder, 60-horse-power, automotive engine, called the Model D312 shown here.

The engine is a four stroke, valve-in-head, water-cooled model with a bore of 4¼" and a stroke of 5½". Maximum horsepower is developed at 1,800 r.p.m. and maximum torque of 193 lbs.-ft. at 1,200 r.p.m. Piston-displacement is 312 cu. inches.

Pistons in the Model D312 are of aluminum alloy. The block, cylinder-head and crankcase unit are in cast alloy iron. There are five main crankshaft bearings, with a total bearing surface of 89.5 sq. inches. Crank-pin bearings are 2⅝" in diameter and 1⅞" in length. There is a crankshaft torsional vibration-damper.



Water circulation is by pump, with the operating temperature of the water controlled by thermostat. There is an air-cooled type lubricating oil cooler provided. Pressure lubrication is provided to all main and crank-pin bearings, camshaft bearings, valve operating mechanism and timing gears.

The engine fuel system is manufactured by Caterpillar Tractor Co., and features solid injection into precombustion chambers. There is an individual pump and valve for each cylinder; and the system is factory set, requiring no adjustment in the field.

For replacement installations, "Caterpillar's" Model D312 engine is offered as a complete unit, equipped with a five-speed Spicer No. 2553 transmission and 13-inch single-plate clutch. . . . For more details write to Caterpillar Tractor Co., Peoria, Ill., mentioning FLEET OWNER, please.

1940 Peak Truck Year

(*Continued from page 20*)

296,000 that existed in 1917. The improving of roads of military importance is going forward under the cooperative planning of the War Department and the Public Roads Administration, based on twenty or more years research. This activity should provide the answer as to efficient highway facilities.

But while the 4,500,000 trucks in use by the motor carriers, the baker, the grocer, the manufacturer, the farmer and all other lines of business may seem numerically sufficient, little is known of the potential capacity of these vehicles, and the extent to which they may be used in moving up supplies to army bases and in handling traffic for the defense industries, disrupting as little as possible the normal requirements of commerce.

With new defense plants being constructed at different localities throughout the country, the need is for providing these plants with adequate transportation service. Will the plants be built in some of the 48,000 communities served exclusively by highways? Are there sufficient rail, water and highway facilities in particular areas where plants are expanded or where new ones are to be built? These are just a few of the transportation questions that arise out of the enormous defense program.

The answer to them will be found only after painstaking reseach, particularly as relates to highway transportation which comprises several million individual operations.

The transportation Act of 1940, recently signed the the President, clears up one of the serious hindrances to the Army use of commercial highway transportation facilities. Before the Act was passed motor carriers were virtually prohibited from moving commodities on government bills of lading, because the Army was required to invite competitive bids for movement by motor truck, while the rail published tariffs were accepted. The provision in the new Act which eliminates land grant rates, now permits the Army to recognize the motor carriers' published tariffs.

Another problem which has had its effect on commercial transportation under normal conditions, as well as during the current defense program, is variation in the sizes and weights laws of some states. The Interstate Commerce Commission recently released three volumes of reports summarizing these variances and indicating the effect of motor truck sizes and weight restrictions on safety. Other volumes which will become part of the Commission's proceeding in its investigation as to the need for Federal regulation of sizes and weights will embrace the effect of truck loads on roads and bridges, the effects on costs of operation as well as the legal aspects of Federal control over sizes and weights.

The engineering, legal and economic data which will be developed in the proceeding should provide the information necessary as a yardstick to clarify a problem that has confronted motor transportation in recent years, because many of the existing regulations are based on the days of solid tires and dirt roads, and have not kept pace with improved highways and refinements in motor vehicle design.

The motor truck industry is aware of what may be expected of it in this Interstate Commerce Commission investigation. It is now seeking further data on engineering aspects of motor trucks as related to highways. The Motor Truck Committee of the Automobile Manufacturers Association, cooperatively with the Society of Automotive Engineers, has been studying in recent weeks means for stating engine performance and rating of the vehicles, factors which are being surveyed currently by the road engineers in conjunction with their planning for the future.

Now! A better ROLLER BEARING for Front Wheels, Differentials and Rear Axles

HERE'S THE BEARING REPLACEMENT YOU'VE ALWAYS NEEDED!

Designed to stand up longer under heavy service—to stay in perfect alignment under any combination of radial-thrust loads—that's why this Link-Belt roller bearing is certain to give greater efficiency. It's the ideal bearing replacement for front wheels, differentials and rear axles, because it assures increased bearing mileage and reduces operating costs. A trial installation will win your lasting confidence—ask your jobber about this better bearing today!

LINK-BELT COMPANY
519 N. Holmes Ave., Indianapolis, Ind.
Warehouses in all principal trading centers

All inner bearings are furnished with GREASE SEAL. Wrapped in oil paper and packed in individual cartons.

Made by the makers of the famous Silverstreak Silent Timing Chain! 0325

LINK-BELT
SHAFER
ROLLER BEARINGS

See our EXHIBIT at the A.S.I.S., Spaces B-159-61-63-65

A PERFECT RADIATOR REPAIR!

the only kind worth making

Radiators can be the source of a lot of headaches in any motor truck fleet—if they're not constantly maintained in perfect repair.

Fleet repair men with reputations for quality workmanship agree that you can't beat Kester Radiator Solder on this kind of work.

Motor-truck radiators stand heavy punishment. Temperature extremes are great. And, for this reason, the solder that keeps them sound must be especially adapted for this heavy-duty service.

Kester Radiator Solder is made with a scientifically controlled flux in the core and special, freer-flowing alloys in the solder itself. The results—as obtained in fleet shops everywhere—are 100% satisfactory. Ask your supplier for complete information on Kester Solders for all types of automotive repairs.

KESTER SOLDER COMPANY

4233 Wrightwood Avenue Chicago, Illinois

Eastern Plant: Newark, N. J.

Canadian Plant: Brantford, Ont.

KESTER RADIATOR SOLDER

How Shall Diesel Fuel Be Taxed?

(*Continued from page* 34)

Kentucky, Louisiana, Nevada, New Mexico, New York, Oklahoma, Virginia, Washington and Wyoming—now have "use fuel tax" laws.

The form of "use tax" that has performed most effectively requires the licensing of Diesel-powered vehicles. The operator of the licensed vehicle then is required to report to the state at regular intervals the consumption of fuel by the vehicle and to pay a tax on the amount consumed at the same rate per gallon as the state tax on gasoline. Such a tax obviates the need for a general tax on all fuel which could be used by Diesel-powered vehicles with its accompanying complications in providing a refund of the tax on that portion used for non-highway purposes.

Experience has shown that the "use fuel tax" is the most desirable method of collecting the levy on Diesel fuel consumed on the highways, for it makes possible the maximum collection with a minimum of difficulty and expense.—*American Petroleum Industries Committee, American Petroleum Institute, New York, N. Y.*

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Advances in Engines and Fuels Predicted

EARL BARTHOLOMEW, prominent automotive engineer who in 1930 foresaw almost exactly the developments in fuels and engines of the last 10 years, predicts that automotive progress during the next decade will dwarf the achievements of the thirties.

Visualizing the car of 1950, Mr. Bartholomew, director of the engineering research laboratories of the Ethyl Gasoline Corporation, forecasts striking gains in fuel economy. He foresees smaller engines in both passenger cars and commercial vehicles, with still higher compression-ratios and better volumetric efficiency, and with substantially greater power output.

The Ethyl laboratories in Detroit, Mr. Bartholomew discloses, are completing successful tests with engines having compression-ratios above 11-to-1, and are requiring a fuel of decidedly higher anti-knock value than is now generally available. Fuel meeting such requirements will be ready when needed, Mr. Bartholomew declares.

Gasoline of 95 road octane quality, in the opinion of Mr. Bartholomew, will be in supply at roadside service stations within the next five years. Such fuel, he said, might result in an improvement in economy of 35% or more, with performance even better than it is today.

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Michigan Roads Adequate for Defense

THE STATE of Michigan, with a three-cent gasoline tax, has built a system of highways generally adequate for national defense needs, according to H. C. Coons, deputy state highway commissioner. Most of the state's highways, he said, are strong enough to withstand the wear and tear of travel by tanks and tractors dragging heavy military equipment. He emphasized, however, that lugs or "grousers" are very destructive to roads and would have to be left off tank treads to prevent serious damage.

"The Michigan road system is in pretty good shape to meet military needs as a whole," said Mr. Coons. "We may have to strengthen some bridges and widen some roads, but for the most part we are ready now."

Automotive Facts and Figures

OFTEN we are asked for figures on the previous year's automotive production and registration. The following tabulation has been issued by the Automobile Manufacturers Association. It represents the automotive industry's achievements during the year ending September 30, 1940. Keep it for future reference.

Production and Value

Car and truck factory sales, U. S. and Canada	4,285,000
Passenger cars	3,475,000
Motor trucks	810,000
Percentage increase over 1939. Motor Vehicles	19.5%
Wholesale value of cars, U. S. and Canada	$2,229,100,000
Wholesale value of trucks, U. S. and Canada	$ 598,400,000
Wholesale value of cars and trucks combined	$2,827,500,000
Wholesale value of parts, accessories and tires for replacement, and service equipment	$1,220,000,000
Motor vehicles, accessories, service equipment and replacements of parts and tires	$4,047,500,000

Registration

Motor vehicles registered in U. S.	31,400,000
Motor cars	26,900,000
Motor trucks	4,500,000
Per cent of new vehicles sold in U. S. required for replacement of vehicles scrapped (average 1930-39)	85%
World registration of motor vehicles	45,400,000
Per cent of World's automobiles in U. S.	69%

Taxes

Total motor vehicle user taxes	$1,722,000,000
Gasoline taxes, federal, state and municipal	$1,083,000,000
Percentage motor user taxes to all taxes from all sources, federal, state and local	11%

Foreign Sales

Number of motor vehicles exported from United States	242,000
Per cent of U. S. production exported	6.0%
Value of motor vehicles, parts and tires, exported from U. S.	$ 271,000,000

Automobile's Relation to Other Business

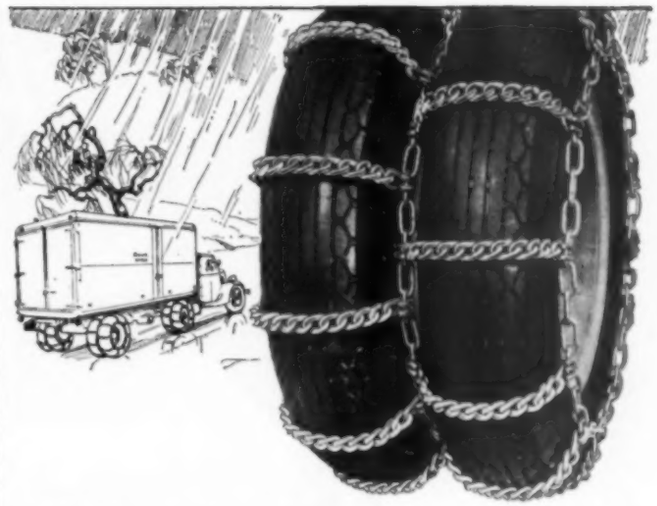
Automotive industry is the largest purchaser of gasoline, rubber, steel, malleable iron, lubricating oil, plate glass, nickel and lead.	
Railroad carloads of automotive freight shipped	3,755,000
Rubber used in automobile industry	80%
Steel used by automobile industry	17%
Lumber, hardwood, used by automobile industry	4.5%
Copper used by automobile industry	13%
Lead used by automobile industry	34%
Zinc used by automobile industry	11%
Tin used by automobile industry	12%
Aluminum used by automobile industry	10%
Nickel used by automobile industry	23%
Gasoline consumption by motor industry	90%
Gasoline used by motor vehicles (gallons)	22,044,128,000

Motor Vehicle Use

Number of communities served only by motor vehicles	48,000
Number of children carried to school daily by buses	3,742,000
Mileage of rural highways used by U. S. Post Office Department for delivery of mail	1,392,657
Per cent of passenger car mileage used on business	55%
Per cent of motor vehicles on farms and in villages under 2,500 population	41%
Per cent of trucks privately owned and operated	86%
Per cent of livestock hauled to market by truck.	53%

Motor Trucks and Buses

Motor trucks in use	4 500,000
Total special motor truck taxes	$ 440,300,000
Taxes per dollar of gross revenue, for-hire trucks	6.8¢
Number of bus and truck drivers	3,800,000
Motor buses in use	140,000



THEY'LL HOLD *the* ROAD *with* CLAW TRUCK CHAINS

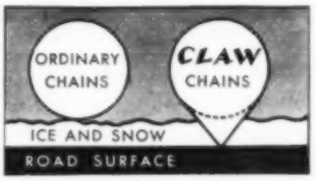
Only *CLAW* chains have the knife-edge that cuts into ice and snow for positive traction and maximum skid control.

CLAW GRIP

Regardless of road conditions... ice, snow or mud... trucks equipped with heavy duty ***CLAW Truck Chains*** hold the road and get through on schedule.

CLAW Truck Chains are built for all-weather performance. First, there's the patented ***CLAW***ing edge that actually bites into snow and ice... provides positive, non-slipping traction. Then, there's 20% more metal in every cross link (see diagram below) adding extra wear and mileage. And, because every ***CLAW*** link is built of ***CLAW***-Alloy steel, the toughest chain metal known, ***CLAW*** Truck Chains can take the terrific abuse of heavy duty trucking and give maximum safety and mileage at low chain cost.

CLAWS are easy to put on too. The improved Blue Boy fastener snaps on in a jiffy. Special Indented Rim Chains eliminate play and excessive breakage between cross and rim chains. Your trucks will hold the road and get through if you use ***CLAW*** Truck Chains. Write for illustrated literature.



20% MORE *CLAW*-ALLOY STEEL IN THESE KNIFE EDGES... Unlike ordinary round links, ***CLAW*** links have a protruding "V" of steel that bites deep into ice and snow. There's actually 20% more metal in every ***CLAW*** cross link for safer, longer mileage. They can't slip because they ***CLAW***.

COLUMBUS-McKINNON *Chain* CORPORATION

General Offices: TONAWANDA, N. Y.

Plants at ST. CATHARINES, ONT., CAN. and VEREENIGING, SO. AFRICA

A Swiveling, Tilting SEAT PEDESTAL for Quicker and Easier Delivery Service

FOOT TRIP RELEASES SEAT TO SWIVEL

The new Eberhard "Pedaloc" driver's seat pedestal has unique features that meet the needs of small delivery truck service. When a stop is made the swivel seat is instantly released by pressure on the convenient pedal. After the driver slides out from behind the wheel, he can tilt the entire seat forward, thus giving maximum clearance through the side doors for cases, boxes or baskets.

The "Pedaloc" seat pedestal is simple and sturdy in construction. In the upper picture herewith the locking key has been raised by the pedal to permit the seat spider to swivel from the driving position. When the spider returns to the driving position the spring-operated key automatically locks it rigidly

For greatest convenience and speed in operation of your small delivery trucks, don't fail to consider the new "Pedaloc" seat pedestal, No. 575717.

See your dealer or write direct to

Eberhard Manufacturing Co.
Division of
EASTERN MALLEABLE IRON CO.
CLEVELAND, OHIO

SEAT CAN BE TILTED FORWARD

EBERHARD ★
AUTOMOTIVE HARDWARE
Consult the LATEST EBERHARD CATALOG
E

Passenger-Cars

(*Continued from page* 23)

pany to raise the mileage on any individual car within a given period and reduces the fixed and total cost-per-mile figures.

The new plan also keeps the fleet up-to-date. New cars on a low-mileage assignment are not left there for three, four, or five years, but are shifted to high-mileage assignments before they become out-moded.

Equally important in reducing car operating costs is the company's program of early replacement of their service-cars. Phillips' policy in this respect is to replace a vehicle prior to the necessity of making heavy repairs. Thus, all motorized equipment is at all times safe, dependable and economical to operate, and always acceptable to those required to use it.

The company's regular grade of gasoline is used in all cars, with the exception of a few that are specifically designed to use the premium grade. Use of top grades of oil and grease in conjunction with oil-filters, regular lubrication service and regular oil-changes are further precautions which keep maintenance costs and engine wear at a minimum.

This new service-car plan, backed by periodic tune-up, a preventive maintenance program, a scheme of rotating cars from high- to low-mileage assignments, and a program of early trade-ins, has resulted in a definite reduction in the cost of employee-transportation for the company.

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Clutch Survey

(*Continued from page* 28)

scores or grooves indicate that the facings were causing trouble, either because they were permitted to wear down to the rivets, or because they were especially hard. In reconditioning the flywheel-face, it is necessary to take off exactly the same amount of stock from the flange, as from the clutch face; in fact, remove as little stock as you possibly can.

The face of the pressure-plate, too, should be given similar attention. These two jobs ought to be a "must" operation on every clutch job done in the shop. Sometimes such surfaces might *appear* to be perfectly satisfactory, but a careful inspection may reveal that they are badly warped, making it impossible to obtain accurate adjustment. Flywheel-face and pressure-plate reconditioning (or exchange) can cut down clutch maintenance costs appreciably; try it some time!

Source of supply always being of interest, we next asked *"What is your principal source of supply on clutch replacements?"* . . . Somewhat evenly divided were the answers, some fleets mentioning both sources, as follows: "Vehicle dealer or branch"—93; "Automotive jobber"—102.

We also inserted a question asking if any special equipment is used for working on clutches, but the replies were not very numerous. The following equipment was written-in: "Aligning pilot tools"—13; "Pressure plate fixtures"—4; "Riveting outfits"—2; "Transmission hoists"—4; "Arbor presses"—4; "Finger gauges"—2; "Bearing pullers"—2; "Clutch jack"—1.

Although serious clutch troubles were not specifically stressed, there were a number of interesting remarks penned in at the bottom of many of the questionnaires. Here are some of them, picked at random:

"Have difficulty in getting facings proper thickness, to permit proper throwout without clashing gears."

"Fingers and hinged parts wear too rapidly on most clutches."

"Some clutches are built entirely too light for city delivery work."

"Better construction needed to seal transmission and prevent grease leaks."

"Most trouble is from grease and oil getting onto facings." (Mentioned 8 times.)

"We check pedal clearance every 3,000 miles and have very little trouble."

"Clutch is as good as a driver.

With good driver will last indefinately."

"Springs too light for heavy-foot driver; clutch-plates too flimsy."

"Until we tried all-metal clutch plates, we had considerable slipping trouble."

"On all engine overhauls we replace clutch plates. Used plates that are good are then used on clutch jobs that have to be done between overhauls."

"Splines in plates wear out too fast. Would like bi-metallic lining in clutch plates as standard equipment."

"If job is caught in time, it will save replacement of entire clutch."

"It is remarkable how clutches stand up under severe fleet use."

"Clutches in low-priced vehicles still give relatively poor service."

"Heavy trucks need better clutch cooling. Metallic facings would help."

"Many clutch troubles could be eliminated by hydraulic drives."

"Lining pulls off from rivets, usually before it is worn out."

"Would like to se standardization of clutches on all vehicles, by size."

"Clutch throw-out bearings give a great deal of trouble." (Mentioned 6 times.)

"Warped plates is one of our chief complaints."

"Grease and oil getting on linings, causes glazing and chattering." (9 times.)

"Most clutches too small for start-stop, door-to-door work." (6 times.)

"Drivers cause us a lot of clutch trouble, by riding on pedals; also by their failure to report slipping clutches and the lack of pedal clearance." (5 times.)

"Since most trouble is caused by drivers, we favor the use of heavy springs used in some clutches, which tend to prevent clutch riding."

"Clutches will last longer if you make sure that they are not slipping."

And that, folks, is the story on clutch maintenance. The survey can be considered quite representative, as it includes the experiences of 171 fleet operators, located in 33 states, Alaska, Hawaii and Canada, having an average of 156 vehicles each. These fleets operate 14,808 trucks, 1,205 tractors, 2,428 trailers, 6,054 passenger-cars, 1,230 buses, 550 taxicabs and 464 miscellaneous vehicles, making a grand total of 26,739 vehicles.

Maybe it will be in order to give you a list of the industries, whose fleets participated in this survey. This will serve to give you a better idea as to the general coverage of it, and also an idea of the *tough* job it is to word a questionnaire that will be answerable by a fleet operator in *any* line of business. Fleets in these industries participated: Trucking, local and long distance; ice cream; dairy products; bakeries; public utilities; manufacturers; municipalities; petroleum companies; ice and coal dealers; contractors; building material companies; grocers; department stores; meat packers; drive-yourself companies; truck-rental companies; bus operators; brewers; laundries; county departments; state departments; federal departments; food products; bottlers; taxicab companies; lumber companies; newspapers; nurseries; insurance companies; hardware wholesalers, etc.

So you see, this survey is *quite* representative. We would like to see a greater number of fleet operators participate in this monthly feature, in return for which you will get a private and personal copy of the *confidential* tabulation which we make. This contains all such information that we can't give here—such things as tradenames, etc.

This month's questionnaire promises to be unusually interesting. If you feel that you'd like to get the confidential report which it will bring, just turn to page 55, tear out the page, fill in the answers to as many questions as you can (or as you care to) and send it back to us. Rest assured that everything is kept *confidential*, and that your name is *never* mentioned to anyone, or at any time. It's your cooperation that we need to make this thing a success. Thanks.

MOVING ONE MILLION MEN

A TRIBUTE TO THE INITIATIVE AND ABILITY OF THE MOTOR TRUCK AND BODY MANUFACTURERS OF AMERICA

Providing adequate transportation for a million soldiers and for the food, supplies and ammunition which they require, is an essential part of the National Defense Program. When and if a crisis comes, the necessary mass movements of men and materials will be carried out *quickly, efficiently* and *safely.*

For this solemn hour—when the very "Life, Liberty and Pursuit of Happiness" of every American may be challenged—the Motor Truck Manufacturers of this great nation are already well prepared. Army vehicles, small and large—from midget scout cars to ten-ton armored trucks—will soon be rolling off the production line at an almost unbelievable rate of speed.

It is truly a Herculean task that the American motor truck industry has undertaken, for this vital work is in *addition* to its regular peace-time pursuits. Only the initiative, resourcefulness and ability to overcome all obstacles, which are inherent characteristics of this great industry, make such a program possible.

To these qualities, found only in the world's greatest democracy where private industrial enterprise has been fostered, The Sherwin-Williams Company pays tribute.

★ ★ ★

As is practically every American industry today, The Sherwin-Williams Company is doubling its efforts both to keep pace with the demand from private business and at the same time to provide the "Specification" materials required for National Defense.

To supply *lustreless* olive-drab enamels for mobile army units and at the same time to produce colorful, *high-gloss* Kem Transport Enamels for commercial cars, is typical of the ability of The Sherwin-Williams Company to play its part in this great program.

THE SHERWIN-WILLIAMS CO.
CLEVELAND, OHIO

More Shop Work in Less Time

..with this handy Kellogg Portable One-End Lift

Do you want to reduce the hours of time and needless dollars spent in washing and servicing your fleet units? You can get those jobs done quicker, easier, with a Kellogg Portable Lift.

No installation—workman simply rolls the Kellogg Portable Lift under the axle and turns on the air. Up goes end of car (front or rear) to desired height, as much as 56". Just that simple. No need to move cars. Naturally, lubrication jobs, brake service, washing, inspection all take less time—release your units quickly for more work. Kellogg Portable Lifts are not expensive — but they're time and money savers.

FASTER WASHING WITH THE HARDIE-KELLOGG CAR WASHER—Less time, yes—and less labor, less materials needed to keep your units clean. Hot water or solutions at high pressure clean worst grease or mud accumulation in a jiffy. Hardie-Kellogg Car Washers available in a size to meet your needs.

Sales Offices: 332 S. Michigan Ave., Chicago, Ill.; 230 Park Avenue, New York, N. Y.; 3355 East Slauson Ave., Los Angeles, Calif.; 4785 First Ave., South, Seattle, Washington; Niagara Falls, Ont., Canada.

KELLOGG
AIR COMPRESSORS
LIFTS · CAR WASHERS

KELLOGG DIVISION OF THE AMERICAN BRAKE SHOE & FOUNDRY CO., ROCHESTER, N. Y.

More About Filters

(*Continued from page* 31)

of filters, this type of filter was mentioned in about twenty per cent of the replies. However, it is very doubtful if oils which rapidly develop deleterious acids are worth using, as their first costs cannot be greatly less than that of other oils. With oils that are inhibited against acids which attack bearings, there may be a limited service period during which the inhibitor is effective. As soon as this inhibiting agent is eliminated by engine reactions and acids begin to develop, or just before they reach a dangerous concentration, the oil should be drained and the filter-element renewed. Here again, filter size, balanced against good oil condition, would give the optimum results.

The curve for renewal of filter-elements (Fig. 1.) is interesting in that nearly all the fleet operators reported that they changed oil and oil-filter cartridges at the same time. This curve and the curves for oil-changes, where filters are used (Fig. 2.), are of the same general shape and slope, but the curve for filter-element renewals is considerably higher than that for oil-changes when filters are used. The few operators who change oil at relatively short intervals without also changing filter-cartridges produce this higher mileage for cartridge renewals. Both theoretically and from general usage, this program of changing oil without changing the filter is not the best practice, as by so doing an operator is subjecting the new oil to the dirt and contamination which has been retained in the filter.

If acid development is a problem, the new oil will immediately pick up acid from the dirt and acid retained in the filter. There seems to be some evidence, from other sources, that a small amount of acid reintroduced into new oil, tends to act as a catalyst to promote more rapid development of acid in the new charge of oil.

If acid is not a problem, the oil might as well be run the full designed life of the cartridge. This change of practice may apply to only a few operators, but they might find it quite desirable to review their present methods in the light of what others are doing. In explanation of the extreme high mileages of some filter-elements, the use of thin edge-type filters were reported by a few. This type of filter is not replaced as it is cleanable, and this might account for some of the extreme mileages. However, this type of filter was reported, in another question in the survey, as being used by less than five per cent of the cases.

The large majority of the opinion expressed in the survey was to the effect that oil-filters show definite advantages and savings in cost of engine lubrication and in cost of engine maintenance. These same successful users of oil-filters indicate by their service records, as plotted in the charts, that they obtain this success by careful attention to their oil-filters. The relatively low life-mileages reported for oil-filters indicates that oil-filters have about the shortest service life of any part or accessory on an engine. This means that for successful use, the oil-filter must be carefully tended and maintained. The oil-filter is *not* a panacea for engine lubrication ills, but it helps a good oil to do a better job at a lower total cost.

The frequency at which oil-filters are changed should be more carefully considered by the oil-filter manufacturers, the engine builders, and the truck or car manufacturers, so that the location of the filter unit will be convenient for frequent servicing, so that the fittings will be sturdy and easy to take apart and reassemble, so that the removal of the filter-cartridge will be as easy as possible, and so that the possibilities for oil leaks will be eliminated. In the survey replies there were more complaints about the accessories of filters than there were about the filters themselves. Leaks can cause unexpected and serious failures. Oil-filters need as frequent servicing as any accessory on the engine, and this point is

still too often ignored in many filter installations.

In spite of these accessory difficulties, it is evident that the principle of partial-flow oil-filtration has won its way with the fleets. Some of the great differences in filter practice may be caused by equal differences in the quality of various oil-filters. Twenty-five makes of filters permit ample opportunity for extreme variations in the quality of oil-filters offered for sale. In spite of these data indicating successful use of oil-filters, as there are now no generally recognized or standardized quality tests for oil-filters, the filter user is still confronted with the problem of testing sample filters and making his own decision regarding the quality and desired results of the units which he purchases. Service data from a large number of cases and collected by an unbiased organization, as was the data used in this discussion, is of *real* value to the fleet operator in reaching a feasible solution of his particular problems, since the information indicates the trends toward possible results.

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Kraft System

(*Continued from page* 38)

enthusiastic over the new Kraft System, which has been in operation for over a year in some sections of the country. In the year that the system has been in operation, thousands of tires have been renewed under its precision standards. Mileage records of large fleets, it is claimed, have shown the effects of the many controls governing this renewing process.

To the fleet operator, the advent of the Kraft System indicates that fleet men can have their worn casings renewed with assurance that they will be brought up to the original factory standards of tread thickness, toughness and correct balance of both tire and body. Also, the assurance that no bad casings will be renewed, only to blow out a few thousand miles later. And, which is equally important, General Tire engineers who sponsor this process, are quite positive that it will reduce the overall tire costs of any fleet.

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Private Trucks

(*Continued from page* 32)

than 3,500,000 privately owned motor vehicles in the United States (when operated in interstate commerce), have been prescribed by the Commission under authority contained in the Motor Carrier Act of 1935.

The Commission, in 1938, moved under this authority to establish the need for and take jurisdiction over the operation of "private carriers of property" by instituting a series of hearings which were held in about a dozen cities in various parts of the country at which private carriers and others were heard with reference to the need for such regulation. Testimony submitted was under consideration of the Commission between December 1, 1939 and May 1, 1940, when its decision to take jurisdiction and prescribe regulations was announced. The regulations were made effective August 1, 1940.

On petition of the National Council of Private Motor Truck Owners, Inc., the effective date was postponed to October 1, 1940. In the meantime, the Commission received and gave consideration to the petitions of the National Council of Private Motor Truck Owners, Inc., and others, for further modifications and exemptions. Meanwhile, the effective date was again postponed to October 15, 1940.

A Supplemental Report and Orders issued by the Commission on September 30, 1940 granted further modifications requested in the Council's Petition, and denied all other petitions.

While private truck owners generally believe that "safety" regulation was the prerogative of the various States and adequately applied therein—and which did not seek Federal regulation—the jurisdiction of the ICC over the drivers of private motor trucks in interstate commerce

STEWART-WARNER ELECTRIC FUEL PUMP

PREVENTS THIS...

Built by the Pioneers of Fuel Delivery Systems

This Model 110-D Stewart-Warner Electric Fuel Pump is backed by 25 years' experience in the manufacture of fuel delivery systems, and is, we believe, the finest fuel pump yet offered. Bears full approval of Underwriters' Laboratories, Inc.

No more vapor-lock troubles! Trucks equipped with Stewart-Warner Electric Fuel Pumps just naturally don't have 'em! Mounted back at the fuel supply tank, *away from the heat of the motor,* this pump pushes fuel up to the carburetor under pressure—completely and permanently eliminating the usual cause of vapor-lock.

It's fool-proof! It's trouble-free! Contact points are sealed in a hydrogen-filled glass tube, so there can be no sticking, pitting, or burning of points. The new Stewart-Warner Electric Fuel Pump delivers 15 gallons per hour on less than 1 ampere of current! *There is no piston, and no rotating action.* Consequently wear is minimized, resulting in long life for the pump.

Let this amazing pump help keep your trucks rolling—help you cut down road calls and expensive schedule interruptions. You'll find it actually reduces operation and maintenance costs, too! Mail coupon today for complete information!

STEWART WARNER

ELECTRIC FUEL PUMP

STEWART-WARNER CORPORATION

1831 Diversey Parkway • Chicago, Ill.

STEWART-WARNER CORPORATION
1831 Diversey Parkway, Chicago, Ill., Dept. K

Please send complete facts about the new Stewart-Warner Electric Fuel Pump for trucks.

Name.....

Address.....

City.....*State*.....

Firm Name.....

No. 67 Refrigerator Lock. With or without rods. For large or small doors.

No. 12 Leaf-Type Hinge. 8", 12", 16" and 20" lengths.

No. 111 Heavy Duty Lock. Wide bolts. Heavy rod.

No. 19-A Square-corner Hinge. 16" and 20" lengths.

Peter Wendel and Sons

Manufacturers of *Quality* Bodies

Equipped with *Quality* HANSEN Hardware

FOR fifty years, Peter Wendel & Sons, Irvington, N. J., have been noted for quality products—first with vehicles and later with custom-built motor-truck bodies. Recent examples are the bodies shown, built for nationally-known concerns.

For twenty years Hansen has supplied Hardware for constructing better-built bodies. It is standard on all Wendel-built bodies. Preferred for all types of commercial bodies, Hansen combines modernness of design with unusual durability. ASK FOR CATALOG.

Bodies shown were built by Peter Wendel & Sons, Irvington, N. J., and equipped with Hansen Locks and hinges.

A. L. HANSEN MFG. CO.

5033 RAVENSWOOD AVE., CHICAGO, ILL.

does exempt such drivers from the Wage-and-Hour requirements of the Fair Labor Standards Act.

The action of the ICC brings private vehicle operation under Federal regulation for the first time in the history of the United States.

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Body Design

(*Continued from page* 37)

The center deck, from the division panel back to the rear crown panel, is of duck-covered plywood.

Corners:—As shown in the drawing, the rear panel is "beaver-tailed", having a 5-inch radius at the bottom, and a 10-inch radius at and above the top side rails. The roof crown panels over the load space are also shaped to a 10-inch radius.

Interior:—Each side should have a 12-inch solid lining panel at the bottom (inside), as well as six ¾-inch x 2¾-inch tie slats installed above, as shown in the drawing. Rear upright corners can be lined with sheet metal. Doors can be lined with plywood.

Materials:—All structural timbers and flooring to be of well-seasoned oak, securely screwed together and well ironed. Paneling choice is unlimited. Aluminum, autobody steel or high-tensile steel can be used, over a plywood back; or, the regular manufactured metal-faced plywood can be employed. Mouldings are of aluminum or steel. It is preferable to use aluminum-treated duck for the roof-covering, over a plywood decking.

Electrical:—One dome-light is to be installed in the cab ceiling. Two dome-lights are to be placed in the roof of the load-compartment. Exterior marker-lights and reflectors can be installed as in last month's article; or to meet I.C.C. or local requirements.

Finish:—Interior load space might best be finished in aluminum. The exterior permits a number of different color-schemes. The body can be painted in one color, with the mouldings and paint stripes (as shown) in a second color, with the lettering in still a third color. . . . Or, the upper panel can be painted in one color, the lower body panel in a second color, the moulding and striping in a third color, and the lettering in a fourth color. . . . Another optional color-scheme would call for the upper panels in one color, the roof crown and front rear corner and lower panels in a second color, and the striping in a third color. . . . Still another arrangement would be to change the lower panel color inside the paint striping at the cab doors and rear wheels, this working with any of the above combinations.

In selecting colors it is well to bear in mind that perpendicular lines tend to shorten; longitudinal lines tend to lengthen. The use of dark colors above the belt line will make the job look massive; while a dark color below and a light color above the belt-line makes the body look light in weight.

Lettering:—All three body designs presented by this publication, thus far, have had slanting lettering indicated. Lettering that sets at an angle creates a number of different effects; it looks "wind-blown", expresses motion and is different. Many truck operators make the mistake of using too much lettering.

Lettering on a truck body is really "motion advertising", and any truck body having solid sides constitutes an excellent travelling bill-board. The best advice we can give you is to use plenty of color to catch the eye, limit the lettering for fast reading, and keep the truck body in good repair and appearance; also clean.

Obviously, most fleet operators will find it desirable to use more than the two words (FLEET OWNER) which we have indicated on the design sketch, in order to get their message across. In a later article we will present a body design that utilizes more wording.

Sales Engineer Wanted (Adv.)

SALES ENGINEER wanted by nationally-known manufacturer of shop equipment, for outside territorial supervision sales force and contacting and selling major accounts. . . . Want man of good personality; one not afraid to work. Must have demonstrated qualifications in creative merchandising and executive sales management and engineering—mechanical or electrical or both. . . . Man between the ages of 28 and 40 preferred. . . . All applications will be treated confidential; no references approached without permission. . . . Address Advertiser, FLEET OWNER, 224 S. Michigan Ave., Chicago, Ill.

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New Mack Heavies

(*Continued from page* 54)

LF and LJ and on the LFT, LHT, and LJT tractors is through dual-reduction rear axles. A choice of approximately five rear axle ratios is offered with each model. The rear axle housings on these new truck and tractor models are of pressed-steel, heat-treated and fused. Axle shafts are graduated heat-treated and employ the involute type of splines. All rear axles are full-floating and employ Hotchkiss drive.

The LF, LH and LM six-wheelers all use a four-wheel-drive bogie of similar design but of different sizes, according to each model. The Mack six-wheel bogie is simple and accessible and is said to be balanced so that the loading of tires is equal under all conditions and so that braking is even on all four wheels and all wheels contribute their share of driving effort. Mack bogies incorporate banjos of great stiffness, rubber shock insulation of the springs, broad distribution of the load over the frame, and simplified lubrication. They have neither longitudinal nor transverse radius rods. The six-wheel Mack bogies feature a "power-divider" which produces constant torque without end-thrust. This power-divider never locks, but is worked out to provide a bias of torque for the axle having the best traction, this bias never exceeding the safe capacity of its driving parts, while preserving full differential action at all times, according to Mack engineers.

Rear axle housings on the new six-wheelers are steel castings, while axle shafts are of chrome-nickel steel, graduated heat-treated and employ the involute type of splines.

Brakes on all these new tractor and six-wheel models are full air-operated, while the new LF and LJ truck models have hydraulically-operated brakes with BK vacuum-booster.

The LF truck, LFT, LHT, LJT tractor models, and the LF six-wheeler and LH six-wheeler all have frames of high-carbon, heat-treated steel, whereas the new model LJ truck and the LM six-wheeler have chrome-manganese, heat-treated steel frames. All frames employ box-girder type cross-members.

All spring ends are suspended in Mack rubber shock insulators both front and rear on all these new truck, tractor, and six-wheel models. The new Mack Archimoid type steering features this new series of models.

From front to rear, all of these new models have incorporated a harmonious blending of lines with their rugged appearance. The streamlined cabs feature safety and comfort. Of all-metal construction they have slanting V-type windshields which are two-piece, each part opening independently and being adjustable. Driver's seats are all separate units and fully adjustable with both the seat and back cushions made of the new combination spring and rubber (foam-type) construction. Covering of all seats and back cushions is genuine leather and further fittings of these cabs include: chromium-plated windshield frames, two intake and two exhaust ventilators, dual windshield-wipers, dome-light, rear-view mirror, felt-lined glove compartment, coat-hooks, and headlight beam indicator. Shatter-proof glass is, of course, standard throughout these cabs.

CHASSIS CLEANING

PARTS CLEANING

Delivery of motion picture films, perishable foods, and newspapers on unbreakable schedules, under difficult night driving conditions, demands unfailing truck performance. Exhibitors Service Co., Pittsburgh, Pa., keeps 96 trucks rolling, at lowest cost, by making Hypressure Jenny Steam Cleaning the keystone of its repairing, reconditioning and cleaning program. Typical savings include complete motor block cleaning in 15 minutes that formerly required 3 hours, chassis cleaning, before repair, that saves 25% to 40% of mechanics' time, garage service jobs such as floor, window and wall cleaning done quicker and better. Give us the few simple facts below . . . we'll tell you how much Hypressure Jenny can save YOU.

HOMESTEAD VALVE MFG. CO.
P. O. BOX 92 CORAOPOLIS, PA.

MAIL THIS TODAY TO SAVE MONEY!

We employ.....mechanics on dirty greasy repair work.
We repair..... ..trucks monthly. We repaint.....trucks monthly. We clean.....sq. ft. of garage floors monthly.
We want to clean.....

NAME.....

ADDRESS.....

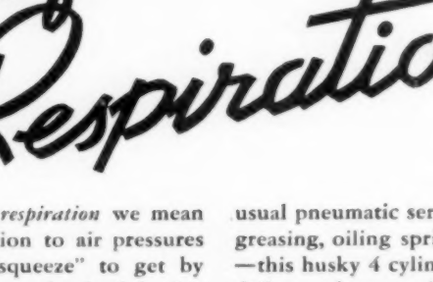
.....

YOUR AIR COMPRESSOR—NO PLACE FOR

Artificial Respiration!

And by *artificial respiration* we mean that constant attention to air pressures . . . that constant "squeeze" to get by with inadequate air to do the job. It's not worth it! Not when you figure the saving of time and worry that a new Brunner Compressor brings you. The stepped-up efficiency of your service. And the actual dollars-and-cents economy of operation of a new, modern outfit.

The Brunner H-7 shown here is the last word in compressor design, supplying automatically plenty of air, even for emergency loads. Besides usual pneumatic services—tire inflation, greasing, oiling springs, motor cleaning—this husky 4 cylinder, 3 H. P. Brunner delivers adequate air for spray painting, hoists, hammers and other time-saving air tools. But whatever your air needs—remember: There's a "right size" Brunner for the job. The Brunner line comprises compressors, single and two-stage, ranging from ¼ to 7½ H. P. (vertical and horizontal models). Handy and instructive Air Manual and Catalog is yours for the asking. Brunner Manufacturing Co., Utica, N. Y., U. S. A.



BRUNNER

For over 30 years the Symbol of Quality

New Goodyear YKL

ADDITION to its truck tire line of a new YKL rib, replacing the former design with an all-rib style, is announced by Goodyear Tire & Rubber Co., Akron, Ohio. Shoulder and body appearance of the tire remain unchanged.

Tread design has the same outward appearance as that of the company's recently marketed "Hi-Miler" rib, and the body of the YKL continues to be constructed of heat-resisting rayo-twist cord and multiple-compounding features.

The company also stepped into the off-the-road tire field again with a big new 21.00-24 "Sure-Grip" for use on giant earth-mover machines, with larger load-carrying capacities than earlier types, on which 18.00-24's were used. The larger size tires are to be employed by earth-moving equipment manufacturers on 10 or 11-yard type equipment, where extra load-capacity and flotation are required.

This addition to the earth-mover line of the company, its engineers say, is made in 20-ply construction for a 15-inch width rim. The tire has an overall diameter of 70.5 inches (just lacking 1.5 inches of being six feet high). At 10 miles per hour travel the maximum load per tire is 17,330 pounds (more than eight tons).

Data on 2-Speed Axles

ADVANTAGES of the 2-speed axles used in Dodge Job-Rated, Dual-Purpose truck models are fully described in a new pamphlet now being distributed by Dodge Division, Chrysler Corporation.

There are many trucking operations, it is claimed in the pamphlet, in which a 2-speed axled truck affords the owner important advantages. Among these are operating economy, flexibility, higher speed or reduced engine wear, resulting in lower maintenance cost.

Quoted as samples of uses for this type truck are: Excavation work where power is needed for pulling out heavy loads and speed for returning light; trucking in hilly cities; intercity hauls through country partly hilly and partly flat; or any truck operation where a diminishing load or a light return trip at higher speed is desirable.

The construction of the Dodge 2-speed axle, the way it operates and what it will do for the operator are all clearly described in the pamphlet. . . . For your free copy address Dodge Truck Division, Advertising Dept., Detroit, Mich., mentioning FLEET OWNER for a prompt reply.

•

Course in Welding and Cutting

A COMPREHENSIVE course of classroom exercises and lectures covering the oxyacetylene welding and cutting processes, has been prepared by Air Reduction, New York. The course consists of two separate books; one containing a complete set of work sheets, and the other lecture material to be used as a supplement to the first.

The book covering classroom exercises is intended to impress the fundamentals upon those who are interested in gaining a working knowledge of the art. Its 22 chapters describe the practice of both oxyacetylene welding and cutting.

The course of lectures, although printed in a separate book, works in close conjunction with the student exercises. It describes the history of the art, the properties of its materials, its theories and its practical applications in industry. The book has been prepared so as to broaden the horizon of the student of the oxyacetylene process and to insure intelligent application of the manipulative skill he is attaining.

The course of classroom exercises sells for 50¢ per copy—lecture books are $1.00 each. Copies may be obtained by writing Air Reduction Sales Co., 60 East 42nd Street, New York, N. Y.

•

Buys 10 Carloads of Plymouth Taxis

HEADING the list of fleet shipments from Detroit auto factories recently was a shipment of 10 carloads of the new Plymouth taxicabs, consigned to Town Taxi, Boston, Mass. . . . The entire fleet of big black-and-white sedans went into service immediately, as fast as lettering could be put on, according to A. E. Hodson, president of Town Taxi, Inc.

New Retreading Stock

THE development of a new type of camelback, claimed to provide greater mileage and increased adhesion, is announced by The B. F. Goodrich Company, Akron, Ohio.

Called "Super-Mileage Camelback," the new material is the result of two major improvements in the processing and handling of the material itself. Instead of spraying the entire compound with solvents to obtain adhesion, Goodrich has developed a technique which treats only a thin layer of the tread compound. The result is a product in which the penetrating depth of the solvent is controlled, providing a soft, adhesive surface that flows freely into the rasped surface of the compound strong and tough.

Other advantages, according to the company's engineers, is its increased resistance to heat, assuring less likelihood of over-curing in the retreading or recapping operation, and resistance to separation.

The second improvement in the compound is the use of Textolin, or varnished cambric cloth, to prevent the camelback from adhering together in the uncured state. The new cambric cloth also prevents the application surface of the camelback from drying out, it is claimed.

•

Du Pont "Anti-Rust"

A NEW powdered rust-inhibitor which checks the formation of rust in automobile cooling systems has been introduced by the Du Pont Company as an addition to the No. 7 line of chemical specialties. Known as "Du Pont Anti-Rust," it is described as a preventive compound, suitable for all automotive cooling systems.

The material is marketed in a "one-dose" aluminum foil package, with a semi-perforated top, which allows it to be easily poured into the radiator. It is said to be harmless to hose, aluminum and other automotive parts, as well as to the car finish or to clothing.

Anti-Rust is designed as a companion product to Du Pont Cooling System Cleanser, and this companionship has been established by following a similar color and lettering motif on both packages. After the cooling system has been cleaned with the cleanser to remove existing rust and scale, the manufacturer recommends using the anti-rust to prevent formation of new rust.

Standard anti-freezes or stop-leaks were shown in laboratory tests to have no effect on the anti-rust compound. It is designed to give protection to passenger cars, trucks and tractors for an entire season. Anti-Rust is packed in a 2¼-ounce container.

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Highways Save Railroads Money

ANALYSIS of Interstate Commerce Commission records reveals that United States railroads have been permitted to abandon hundreds of miles of unprofitable lines where motor highways permit alternative service, according to the American Petroleum Industries Committee of the American Petroleum Institute.

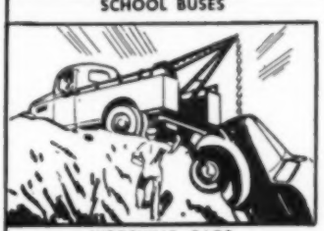
Auto Mechanics to Service Planes?

AMERICA'S defense requirements of skilled mechanics to maintain aircraft and mechanized land units will be filled largely from the nation's garages and service stations, John G. Martin, national director of motor clinics for the Ethyl Gasoline Corporation, predicted recently in addressing members of the Automotive Engine Rebuilders Association at their annual convention in St. Louis. . . . "A plane can be kept in the air only with the aid of a competent ground crew, including expert mechanics, and the need for highly-trained tune-up men soon will be recognized," Mr. Martin said.

New Distributor for Truxmore in Newark

TRANSPORTATION Equipment Co., Inc., 35 Van Buren St., Newark, N. J., announces that they have taken on the distribution of Truxmore Third Axle Units in the New York area. . . . They have also taken over the offices previously maintained by the Truck Equipment Company of Buffalo, N. Y., according to L. A. Sleeper, president. . . . Through this move it is expected that better service will be rendered fleet operators on such products as Third Axles, Kingham Trailers, Thornton-Tandem Units, Tulsa Winches, Watson-Brown-Lipe Transmissions, and other popular lines which they handle.

SCHOOL BUSES


WRECKING CARS

FARM TRUCKS

SLIPPERY GOING

INSTALL THE

THORNTON *Automatic Locking* DIFFERENTIAL

★

TRACTION when and where you need it — Keep Going when mud, sand, ice and snow stall trucks with only ordinary differentials.

Save gas, oil, tires, chains — Cut operating cost

Eliminates spinning of one drive wheel because both rear wheels must rotate when power is applied. Quickly installed in standard rear axle differential carrier, without special tools.

Endorsed by truck and bus operators all over the U. S. A.

THORNTON TANDEM CO.
8701-8779 GRINNELL AVE. DETROIT, MICH.
Makers of THORNTON four-rear-wheel DRIVE for trucks
"When you need TRACTION you need THORNTON"

THIS LOST TIME
Causes THIS OVER-TIME
Here's a Stop of 2 Hours
POINTS OUT ALL DELAYS
"OVERTIME AGAIN"!
"And right here's the reason for it!"
"See where the truck stood still for two whole hours? From 2:00 to 4:00 she never turned a wheel."
"No wonder there was overtime!"
Righto. So don't have your trucks working after hours when they could finish everything during hours.
The Servis Recorder DISCOURAGES that kind of Idle Time that causes expensive and unnecessary Overtime—because its chart tells you the whole situation at a glance.
Write for free Booklet: "Ten Ways of Getting More Work Out of Motor Trucks." THE SERVICE RECORDER COMPANY, 1375 Euclid Avenue, Cleveland, Ohio.
The Servis Recorder
Tells Every Move Your Truck Makes

Hose-Fittings Catalog

A NEW catalog section on its line of hose-fittings for gasoline truck-tank, distillate and fuel-oil hose has been published by the B. F. Goodrich Company, Akron, Ohio and is now available upon request to the manufacturer.

The publication illustrates and describes the company's Permalock Type D couplings for all types of tank-truck hose, all types of distillate and fuel-oil hose and airplane refueling hose, as well as the Speedlock fittings for gasoline tank, distillate and airplane refueling hose.

Data given includes all pertinent details which would be sought by a purchaser.

•

New Electric Windshield Wipers

CHRYSLER cars for 1940 are equipped with double electrically-operated windshield wipers. These are of the variable-speed type, controlled by the driver, entirely independently of engine or vehicle speed. . . . A thermostatic circuit-breaker is used, instead of a fuse. Blades are 10 inches long and clutches are fitted to both wiper arms. The blades are automatically returned to the bottom of the windshield when the current is turned off.

To Remove Rust and Scale

OF SPECIAL concern to bus and truck fleet superintendents interested in safe, modern methods of removing water scale and rust deposits from Diesel or gasoline engine cooling-systems and bus air-conditioning motors, is a new 20-page, illustrated booklet issued by Oakite Products, Inc., New York, N. Y.

The booklet describes a recently developed material, Oakite Compound No. 32, which, due to its high scale and rust-removal properties and wide range of activity, is suitable for many different types of work. In addition to removing scale and rust deposits, the material also provides safe, effective results in de-scaling air and gas compressors, heat-exchangers, mechanical refrigerating equipment and numerous other types of water-cooled equipment.

Bus or truck fleet superintendents may secure free copies of this interesting, fact-filled booklet by writing to Oakite Products, Inc., 52G Thames Street, New York, N. Y. . . . There's no obligation, except that we hope you will mention FLEET OWNER.

•

Free Welding-Electrode Book

AN ILLUSTRATED 24-page booklet issued by the Wilson Welder and Metals Co., Inc., New York, has been prepared as a useful guide in helping to make quick, sure selections of proper electrodes for all classifications of welding work. . . . The booklet reviews the general description, application, procedure for use, and physical properties of Wilson electrodes for numerous and varied welding purposes.

Discussed in this manner are the flat, vertical or over-welding of mild steel; single and multiple pass all-position welding of mild steel; horizontal fillet and butt welding of mild steel; high-quality, high-speed, deep-groove welding of mild steel; general purpose, all-position welding with A. C. transformers; all-position welding of carbon-molybdenum and low-alloy high-tensile steels; horizontal fillet and butt welding of low-alloy high-tensile steels; and all-position welding of cast iron. Suggestions are also offered regarding the selection of proper electrodes for other types of welding.

The final section of the booklet is devoted to "Welding Symbols and Instructions for Their Use", as published by the American Welding Society. Copies of this booklet, No. ADW-18, may be obtained by writing the Wilson Welder and Metals Co., Inc., 60 East 42nd Street, New York, N. Y., mentioning FLEET OWNER, please.

•

Airco Builds New Plant

IN ORDER to extend its servicing facilities to customers in San Francisco and vicinity, the Air Reduction Company has recently completed the construction of a new acetylene plant at West Berkeley, California. . . . The new plant is located just a short distance from the site of the old plant, and will include all modern equipment for the manufacture of acetylene, the filling, compressing and handling of cylinders.

Parts Cleaning Booklet

A NEW, attractive and profusely-illustrated booklet has been issued by Bendix Products Division of Bendix Aviation Corporation, South Bend, Ind., covering the uses and origin of the new Bendix Cleaner for metal parts.

Such principles as penetrating action and wetting action are clearly explained in connection with the description of how Bendix Cleaner works. Altogether, the booklet goes far beyond ordinary sales brochures in general information and practical ideas. . . . Free copies will be sent by the manufacturer upon request. . . . It's always appreciated when you mention FLEET OWNER.

•

Reo Announces Large Bus Order

DELIVERY of eight Reo Flying Cloud coaches to Foster Bus Lines, Troy, Missouri, completing a $75,000 order, was announced recently by Reo Motors, Inc., Lansing, Michigan. . . . This marks the first major step in Foster's program of standardizing on Reo equipment, which, according to Reo, will continue until the company's entire fleet is replaced with Flying Cloud coaches. Foster coaches operate between St. Louis, Mo., and Cedar Rapids, Iowa. . . . The new coaches are pusher type, with motors in rear, and are of integral chassis and body construction. Built largely of aluminum, they are said to be exceptionally light in weight.

•

Two New A. C. Managerial Appointments

THE appointment of Eugene B. Powell as regional sales manager of the Pacific Coast area, and Ernest W. Wright, as regional sales manager of the Southwestern area, is announced by Wilson S. Isherwood, general sales manager of the AC Spark Plug Division of General Motors. . . . Mr. Powell succeeds Charles S. Rogers, resigned, and Mr. Wright assumes Mr. Powell's former place. . . . Both sales executives have had long service records with the AC sales division.

•

Plymouth Advances Two to Sales Posts

PROMOTION of R. C. Somerville and A. D. Innis to the newly created posts of sales supervisor of the Plymouth Division of Chrysler Corporation, was announced recently by Joseph E. Bayne, general sales manager.

•

Milburn Elects Lawrence Secretary

W. LESLIE LAWRENCE was recently elected secretary of the Alexander Milburn Company. . . . Mr. Lawrence filled various positions with the company, first as Baltimore representative, then on national sales, and a short time ago became one of the company's directors. He is well acquainted in both the oxy-acetylene and paint-spray fields. . . . Mr. Lawrence succeeds Harvey H. Johnson, who passed away on June 2 after serving the company for 25 years.

Bearing Lubrication Booklet

AS AN AID to choice of the correct lubricants for ball bearings, New Departure Division of General Motors Corporation, offers a 15-page booklet covering the selection and application of both oils and greases.

Particularly useful is a simple method of determining the proper grade and viscosity of oil for various operating temperatures and bearing speeds. Also, a discussion of the composition and use of greases with reference to their relative suitability under different speed, temperature and moisture conditions.

For your free copy write New Departure Division, Bristol, Conn., mentioning FLEET OWNER if you don't mind.

•

New Catalog on Spray Equipment

THE ECLIPSE Air Brush Company, Inc., 398 Park Avenue, Newark, New Jersey, has recently issued Catalog No. 77, a 32-page, 8½ x 11 booklet, covering its complete line of spray equipment for both manual and automatic operation. Included in the catalog is a section devoted to their Pneumix air-motored agitators. . . . Free copies on request. . . . Mention of FLEET OWNER always helps.

It Pays
-to be Sure
Your Foglites
are SAFE
NEW! A Glaseal Beam Foglite —Chrome-plated body has malleable iron bracket and locking device that protects against pilferage. Contains genuine G-E all-glass unit that cannot dim with age. Special construction accommodates any Glaseal Beam unit regardless of thickness. 6½" in diameter. Supplied with plastic rotary switch, 10 feet of wire. White or amber lens. No. 600, list $5.00. Black enameled body. List $4.40.
The Do-Ray Sealed Beam Headlight!
Replaces old truck and passenger lamps with ball socket mounting. Heavy construction, genuine sealed beam, double filament unit. List $15.00 pr. (Also 12-16 V for Diesel trucks.)
The "Grand" Foglite, No. 1000. Heavy chromium plated, prismatic lens. Heavy malleable iron bracket fits double bumpers. Illuminated switch. White or amber lens. List $5.00.
Extension Foglite Bracket, No. 603. Raises foglite 4" above normal to clear high grille guards. Heavy malleable iron bolt. For practically any make fog lamp. List 75c.
Ask Your Jobber
DO-RAY LAMP CO., 1458 S. Michigan Ave., CHICAGO
DO-RAY
SAFETY LIGHTING AND REFLECTING DEVICES

Wet Down Bodies...Sponge On NXL Rinse Off..*That's all!*

You can keep your truck (bus) bodies clean and lustrous without a lot of time and labor. You can give them that "just painted" look without spending a lot for cleaning materials.

MAGNUS NXL

is mighty easy to use. Just brush or sponge it on—then rinse off with a hose. Rinse water "sheets off"—there is no streaking. Very little chamoising is ever required.

And because it is a concentrate, a little goes a long way. NXL costs less to use in materials, time and labor, giving outstandingly superior results.

Harmless, to all painted surfaces, easy on the hands and lightning quick in action, you'll standardize on NXL, once you've tried it.

(For very dirty trucks (buses), especially where there's much oil or grease, Magnus 55P, used the same way, is recommended.)

ASK FOR PERFORMANCE DATA

on Magnus NXL and 55P, showing results they are giving, compared with ordinary methods.

MAGNUS CHEMICAL COMPANY

Manufacturers of Cleaning Materials, Industrial Soaps, Metallic Soaps, Sulfonated Oils, Emulsifying Agents and Metal Working Lubricants

36 South Avenue — Garwood, N. J.

MAGNUS CLEANERS

TAPERED ROLLER BEARINGS

Tyson

ROLLER BEARING CORP.
MASSILLON, OHIO

One of the most complete lines in the business—each tire built to give you more miles for less money.

THE GENERAL TIRE & RUBBER CO.
AKRON, OHIO
In Canada—The General Tire & Rubber Co. of Canada, Limited, Toronto, Ontario

GENERAL TRUCK TIRES

KEEP YOUR VEHICLES MOVING ECONOMICALLY with

HALL VALVE SERVICING EQUIPMENT

Ask Your Jobber or write
THE HALL MFG. CO.
TOLEDO, OHIO

BY MEN WHO KNOW FLARES BEST

BOLSER FLARES!

THE NATION'S CHOICE

2 TO 1!

SEE YOUR JOBBER TODAY

Official N. Y. Met. B-W Representatives

THREE firms are announced as representatives of The Bendix-Westinghouse Automotive Air Brake Company for the New York area. . . . They are: Manhattan and Bronx—Smith & Gregory, 535 W. 35th St., New York, N. Y. . . . Kings County—E. A. Wildermuth, 1061 Atlantic Avenue, Brooklyn, N. Y. . . . Queens County—Thomson-Hill Brake Service, Long Island City, N. Y.

•

A.C. Reports Largest Plug Sales Ever

SOME 7,000 employes are now on the payroll compared with 4,950 at this time last year, L. Clifford Goad, president and general manager of AC Spark Plug Company, declared recently. . . . Spark plug production and sales during September, he said, were higher than in any normal month in the company's 32-year history.

•

Sander Maker Changes Name and Address

THE STERLING Products Company of Detroit is now known as "The Sterling Tool Products Company." . . . Offices and factory have been removed to 363 E. Ohio St., Chicago, Ill. . . . C. B. Johnson is vice-president and general manager of the new corporation. . . . Pneumatic and electric sanders are the chief products.

"Best in the Long Run"

Goodrich Silvertowns

FOR TRUCKS AND BUSES

OUTSTANDING

performance in the Automotive Industry

SKF

BALL and ROLLER BEARINGS

New Kingham Light Weight

ZEPHYR

America's Greatest Trailer Value!

Send for FREE Descriptive Folder

KINGHAM TRAILER CO.
INCORPORATED
LOUISVILLE • KENTUCKY

WHEN GEAR FAILURES OCCUR TOO OFTEN INSIST UPON–

"STURACO"

EXTREME PRESSURE ("EP") GEAR LUBRICANT

D. A. STUART OIL CO. Ltd.

Established 1865

CHICAGO U. S. A.

Warehouses in Principal Industrial Centers

Series of Business Reports Available

PUBLICATION of a series of reports based on studies of current management problems in American industry was announced recently by the George S. May Business Foundation.

The reports, which are available free of charge upon request, cover the following topics: *An Appraisal of Executives' Compensation Plans. . . . A Study of Indirect Labor Control in the Lumber Industry. . . . An Analysis of the Grain Industry. . . . A Study of Supervisory Incentives. . . . An Analysis of the Brewing Industry. . . . A Study of Office Layout and Procedures. . . . An Analysis of the Wholesale Hardware Field.*

The Foundation maintains offices in New York at 122 East 42nd Street and in Chicago at 111 South Dearborn Street, and is a non-profit enterprise which carries on research in the interest of private business enterprise. Study subjects are selected by the Foundation's Board of Trustees on the basis of their current importance and general interest to business men. Write for any of the above (free) reports that might interest you.

●

Southwestern States Use 11% of Motor Trucks

THE combined population of the states of Texas, Arizona, New Mexico and Oklahoma equals only seven per cent of the nation's total, yet these four states have 11 per cent of the country's motor trucks.

Within these four Southwestern states are 10,679 communities. Of these, 3,887 towns and villages, or 36 per cent of the total, are dependent solely on motor vehicles for transportation and service.

Gunk CLEANS CLEAN

Degreaser

Concentrated!

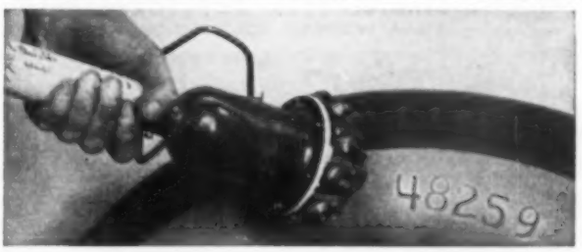
Beware of Partly Diluted Imitations

Some stores may use the name of Gunk loosely to identify Inferior Products—Don't Be Fooled—If the degreaser does not bear the Gunk nameplate, it is not Gunk and will not offer you the advantages of Gunk . . . such imitations should be flatly refused. **Free Carburetor Cold Tank Formula to Gunk Users On Request.**

A. F. CURRAN, MALDEN, MASS.

DON'T MAKE THIS MISTAKE!

● *"Many makes of truck tires are often condemned as being a 'bunch of junk' without proper justification, all because the fleet operator was careless in his record-keeping, and did not actually know the mileage delivered by the tire in question"*—An Editorial in a recent issue of FLEET OWNER magazine.



The EVERHOT TIRE BRANDER

- Quickly Brands Your Own Number
- Provides Absolute Identification
- Makes Tire Record Keeping Easy
- Costs Little—Lasts a Lifetime

FREE! The EVERHOT Tire Cost System is furnished free to every user. Ask us to send you sample forms and to show you how your tire costs can be cut still further . . . No obligation.

EVERHOT MANUFACTURING COMPANY,
MAYWOOD, ILL.

NO ARGUMENTS NO ALIBIS

●Any wasted time—whether necessary or unnecessary; any unusual speed; in fact, any deviation from predetermined schedules MUST BE EXPLAINED. Alibis or arguments don't go. The RECORD MASTER chart is a written record of your trucks' activities and this record does not lie. It is your safeguard against wasted time, speeding and many other costly operation leaks.

RECORD MASTER

rides each vehicle every minute and accurately and automatically records all movement and stop. The chart is under lock and can not be tampered with. You read the story the same as a written report from the driver. Has no connection with electrical or mechanical operation of truck.

ASK US

for free descriptive folder giving full details and cost. Just drop us a line on your letterhead today.

HERCULES AUTOMOTIVE SALES CORP.
THORPE BUILDING MINNEAPOLIS, MINN.

REDUCE MAINTENANCE COSTS
by replacing common nuts with Elastic Stops... the nuts that hold tight under any condition of vibration and hard service.

A 56-page Catalog and Data Book contains a graphic explanation of the Elastic Stop principle, presents test and application data, and lists the complete line of nuts • Write for a copy.

ELASTIC STOP NUT CORPORATION
2334A VAUXHALL ROAD, UNION, NEW JERSEY

Elastic Stop SELF-LOCKING NUTS

This FOUNTAIN BRUSH
FOR WASHING TRUCKS—BUSSES
CUTS WASHING TIME IN HALF!

Quickest, easiest, best for fleet care. Made in hollow cast aluminum head with four foot handle supplying continuous stream of water. Bristles sturdily set in head and flare to 8" diameter. Weighs only 2¾ pounds. This brush will easily pay for itself many times over in a few months. ORDER TODAY and ask also for FREE descriptive folder.

$10.50 Postpaid • Guaranteed

FLOUR CITY BRUSH COMPANY
301 Fifth Ave. So., MINNEAPOLIS, MINN.
or PACIFIC COAST BRUSH CO.
2245 East 38th St., Los Angeles, Calif.

Superior Comfort and Facilities
IN DAYTON, OHIO

400 ROOMS
WITH BATH from $2.50
O. E. TRONNES, MANAGER
HOTEL MIAMI

FREE
A valuable Copy of the
KEEL CODES & RECORD SYSTEMS
•
WRITE TODAY

How to STOP *Tire* LOSSES

Don't guess at the mileage on your tires—know. Keep simple, accurate record of your tire purchases, retreads, recaps, adjustments, etc., with the easy Keel Rotary Brander. Leading fleet operators use the Keel System not only to save money on their tires—but to discourage theft of tools, batteries, cases barrels, etc. WRITE FOR COMPLETE DETAILS.

KEEL & COMPANY
21st & Toronto Sts.
PHILADELPHIA, PA.

Offers Export Packing Information

THE ENTRANCE into the export market of firms which heretofore have confined their business chiefly to the domestic market, and the current interest in the enlargement of our export markets, have created a widespread demand for information on how to pack goods for safe export shipment, according to Thomas E. Lyons, Chief of the Transportation Division, Department of Commerce.

This situation has arisen largely because numerous inquiries and orders for products previously supplied by European countries have come this year to American manufacturers from Latin America, the Far East, South Africa, and other regions.

To meet the demand for packing information and to provide a basic reference work covering the subject, the Transportation Division has prepared a comprehensive manual *"Modern Export Packing."* This 530-page book deals with every phase of the export packing problem, describes the choice and construction of containers, methods of interior packing, prevention of breakage, pilferage, and marine moisture damage, packing for lowest customs charges in foreign countries, and numerous other related subjects.

Copies of *"Modern Export Packing"*, Trade Promotion Series No. 207, may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., or through any of the field offices of the Bureau of Foreign and Domestic Commerce located in important commercial and industrial cities throughout the United States. Price, $1.00.

•

Booklet Likens Auto Production to Defense

WITH the motor vehicle makers busy tackling manufacture of equipment for national defense, the Automobile Manufacturers Association calls attention, in a special booklet, to the fact that the same fundamental requirements apply to mass production of defense items and of cars and trucks.

The book, entitled *"What It Takes,"* stresses "time, planning and specialization" as the key factors contributing to America's tremendous production capacity, and illustrates this theme in a step-by-step description of the work involved in automobile production.

Before a new model can be placed on the assembly lines and the daily flood of production can begin, often a year or more of intensive preliminary work must be

HOTEL BARLUM
Now one of the
ALBERT PICK HOTELS
21 FLOORS OF OUTSIDE ROOMS

Each with Combination Tub and Shower
FROM $2 DAILY SINGLE
• DETROIT •

engaged in, the book explains.

A foreword written by Alvan Macauley, veteran automobile manufacturer and president of the Association, points out that, in mass-production, plants and equipment are specialized to single functions.

"Whatever the nature of the work," says Mr. Macauley, "months of careful study and engineering go into perfecting final blueprints for the new products. Only then can the needed tools and machinery be determined and ordered. Likewise, procurement and processing of materials, rearrangement or reconstruction of plant facilities, and establishment of production techniques all must wait completion of this earlier work.

"We believe clear understanding of these essentials will greatly aid attainment of the defense objectives and will strengthen national unity in this period."

Starting with experimental engineering work on engines and other mechanical parts, *"What It Takes"* leads through development of body designs, selection of new machinery, creation of dies for stamping metal parts, line-up of sources for parts and raw materials, and finally the annual rearrangement of plant facilities at "change-over" time. The minute attention to detail in all these stages, the story develops, is what makes possible the start of new production after only two to six weeks of plant shut-down.

From that point on, an equally elaborate system of plant synchronization—careful scheduling and timing of production of more than 15,000 separate components of the car—make possible the one-a-minute rate of production on final assembly lines, an output which at the height of the season yields, from the industry as a whole, a daily output of 20,000 automobiles.

●

U. S. Mail Drivers Get Safety Awards

SAFE DRIVING awards were presented to 279 mail drivers of the New York City Post Office by Postmaster Albert Goldman at a recent meeting sponsored by the Greater New York Safety Council. Frank L. Jones, president of the Council and vice-president of the Equitable Life Assurance Society, presided.

The medals, which are conferred by the United States Post Office Department, Washington, D. C., were presented to 75 "first-year" men and 204 truck operators who have driven safely for a period of seven consecutive years.

In all, 796 drivers were eligible for the awards, which cover periods of from one to seven years. 86 drivers were eligible for two-year awards; 89 for three-year medals; 81 for four-year awards; 104 for five-year awards and 157 for six-year awards. These will be made later because, as Postmaster Goldman explained, "the mail must go through".

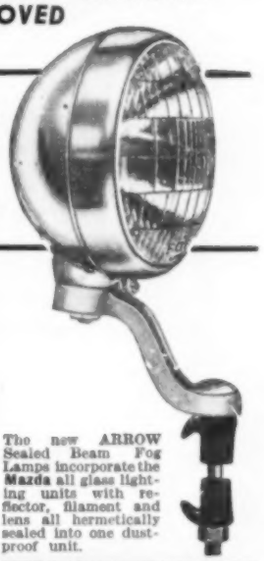
Mr. Jones complimented the New York City Post Office on its "remarkable safe-driving record" made during the twelve-month period ending June 30th, 1940. A total of 550 trucks traveled more than 5,000,000 miles, representing a 10% increase in mileage over the previous twelve-month period. In the face of this increase, accident-frequency was reduced 28%. There are 500 regular drivers and 600 letter carriers qualified to operate parcel post deliveries and collection trucks as needed.

Mr. Goldman, in presenting the medals, mentioned that his interest in safety had started twenty-four years ago when he worked under the late Arthur Williams, who was first president of the Greater New York Safety Council.

FOR *Safer* MILES AFTER DARK

STANDARDIZE ON ARROW'S COMPLETE LINE OF LEGALLY APPROVED SAFETY DEVICES

REFLECTORS - MIRRORS - FLARES
AUXILIARY LAMPS - RUNNING LAMPS - TURN SIGNALS . . . .
SEALED BEAM HEAD LAMPS



All ARROW products are built to rigid standards of performance and durability. That's why commercial operators everywhere know and prefer ARROW equipment. Ask your dealer about ARROW or write us direct. P. O. Box 56.

●

See us at the A. S. I. show, Booths B90-92

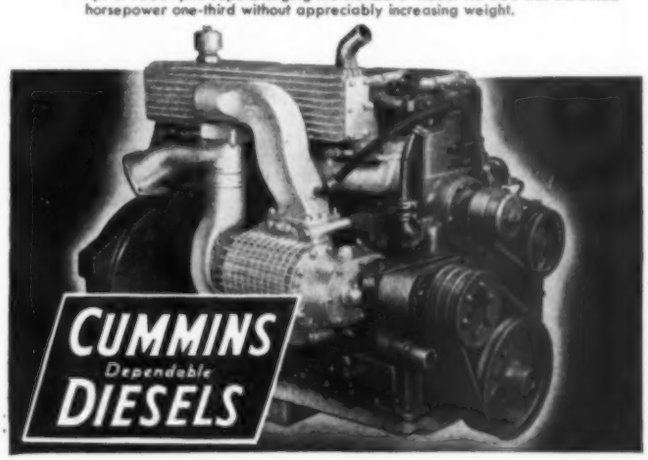
The new ARROW Sealed Beam Fog Lamps incorporate the **Mazda** all glass lighting units with reflector, filament and lens all hermetically sealed into one dust-proof unit.

ARROW SAFETY DEVICE CO., *Inc.*
MEDFORD, NEW JERSEY

ALL HILLS IN HIGH

The White Star Transit Company, Detroit, replaced gasoline power in a new GMC cab-over-engine auto transport with a Cummins Dependable Diesel, immediately noted these results: (1) all hills on Michigan-Illinois-Indiana-Ohio runs now taken in high gear; (2) running time reduced; (3) fuel mileage increased from 7 to 13 miles per gallon. Maximum operating economy . . . faster schedules without hi-balling or speeding—these add up to extra payload profits. These are the reasons why there are more Cummins Diesels in long-line, heavy-duty operations than all other diesels combined. Cummins Engine Co., 1216 Wilson St., Columbus, Indiana.

Below: Model HBS-600 (supercharged) Cummins Dependable Diesel. 200 hp. at 1800 rpm. Supercharging the standard Model HB-600 has increased horsepower one-third without appreciably increasing weight.



Finest Subway Entrance to all Points of Interest

New York's Popular

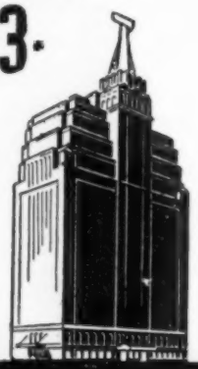
HOTEL

LINCOLN

44TH TO 45TH STS. AT 8TH AVE.

1400 ROOMS *from* **$3.**

Each with Bath, Servidor, and Radio. Four fine restaurants acclaimed for cuisine



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PRESIDENT
John L. Horgan
Gen. Mgr.
HOTEL EDISON
SAME OWNERSHIP

IN THE CENTER OF MID-TOWN NEW YORK

GARDEN-SURROUNDED . . .
CLOSE TO YOUR CALLS

Your business trips should be mixed with some fun . . . golf, tennis, days in the open.

That's why more and more business men are staying at The Claremont, Berkeley's hospitality center, *less than 30 minutes from downtown San Francisco.*

Enjoy Saturday and Sunday in the sun. East Bay golf courses rank among the West's finest.

The Claremont's Terrace Room beckons, too; a cozy, modern cocktail lounge, with windows facing out over the Bay and the Golden Gate. One of the East Bay's superb delights.

See your travel agent or write for descriptive literature.

Make your next stop The Claremont. *Rates from $2.50 a day up.*

Hotel Claremont
BERKELEY, CALIF.

30 Minutes from Downtown San Francisco
Enjoy a new treat; visit The Claremont's Terrace Room, the Bay Region's newest cocktail lounge. Reasonable prices.
C. C. GILLUM, Managing Owner

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Figure Your Increased Profits With TRAILMOBILE

Increase Payload	AT THIS REVENUE				
	$2.00	$2.25	$2.50	$2.75	$3.00
500#	2.40	2.70	3.00	3.30	3.60
600#	2.80	3.15	3.50	3.85	4.00
700#	3.20	3.60	4.00	4.40	4.80
800#	3.60	4.05	4.50	4.95	5.40
900#	4.00	4.50	5.00	5.50	6.00
1000#					

Figure your increased profit. If your average rate is 50c and you increase payload only 700 lbs., you make $3.50 more every trip — $21.00 per week — over $1000 more profit every year.

OUTSIDE FRAME TRAILER

Here's the trailer that makes real money for operators. Light in weight, it permits more profitable payloads without exceeding gross load limits.

Many other profits of modern trucking come from the qualities that are built into this finer trailer. Faster schedules — improved customer relations — less fuel and operation costs — rock bottom maintenance expense. These are economies and profits that the Outside Frame Trailmobile gives you every mile and every day you own it.

Each part of this new and different trailer has been carefully considered for the actual job it has to accomplish. Redesigned and reformed—strengthened here — lightened there — made of standard steels welded and assembled by standard commercial methods to make the strongest load carrying unit known. Yet it is hundreds of pounds lighter, by actual scale weights, than older designs.

. . . The Easy Pulling Trailer

And you don't have to pay a premium price for all these advantages. The cost to you is in the bracket of standard production trailers. May we give you all the details of this Outside Frame Trailmobile to help you make more trucking profits?

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